DISSERTATION ON

A STUDY TO ASSESS THE EFFECTIVENESS OF SELECTED NURSING MEASURES OF NEONATES WITH LOW BIRTH WEIGHT BABIES AT GOVERNMENT HEAD QUARTER'S HOSPITAL , KANCHIPURAM .

M.Sc., (Nursing) Degree Examination

Branch – II – Child Health Nursing

Padmasree College of Nursing

Walajabad, Kanchipuram – 631 605.

A dissertation submitted to

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

CHENNAI – 600 032.

In partial fulfillment of requirements for the degree of

MASTER OF SCIENCE IN NURSING

OCTOBER – 2016

CERTIFICATE

*This is to certify that this dissertation title "**A Study to Assess the Effectiveness of Selected Nursing Measures of neonates with Low Birth Weight Babies at Government Head Quarter's Hospital Kanchipuram"** is a Bonafide work done by **Mrs. I. PRATHEESHA,** Padmasree College of Nursing. Walajabad – 631605 submitted to **The Tamil Nadu Dr. M.G.R. Medical University, Chennai** in partial fulfillment of requirements for the award of the degree of Master of Science in Nursing Branch – II, Child Health Nursing under our guidance and supervision during the Academic period from 2014-2016.*

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ACKNOWLEDGEMENT

Praise and thanks to the god almightly who is the source of wisdom and knowledge, whose blessing and inspiration guided me throughout the course of this study end to submit the dissertation in time.

I reveal my sense of gratitude to the management of Padmasree College of Nursing, Walajabad **Mr. V. Rishikesavan, chairman** for their encouragement to complete the study.

I thank **Mrs. R Malliga Rishikesavan, managing Director**, Padmasree college of nursing, Walajabad, for providing me an opportunity to conduct the study.

I acknowledge my heatful thanks and gratitude to **Sir.Mr.Dinesh kumar,ME.,MBA Secretary**, Padmasree college of nursing, Walajabad, for giving me the opportunity.

I wish to express my heartfelt thanks to **Dr. K. MENAKA, M.Sc(N).,Ph.D.,** Principal, Research Guide of Padmasree College of Nursing, Walajabad, Kanchipuram for her guidance and valuable suggestions and encouragement in conducting the study constant support at every stage of the study which enable me in giving shape to this study.

I express my sincere thanks to **Prof. T.V.Malliga M.Sc (N).**Vice – Principal of Padmasree College of Nursing, Walajabad, Kanchipuram for her constant guidance suggestions to complete the study in time.

I express my sincere thanks to **Ms L.Periyanayaki, M.Sc(N).,M.B.A. (HM)** Associate Professor in Padmasree College of Nursing Walajabad Kanchipuram for her constant guidance, valuable suggestions, helped me a lot in the successful completion of this study.

I am immensely grateful to **Dr. Sabarinath, MBBS., MD (Paediatrics)** Asst. Surgeon, Government Head Quarters Hospital, Kanchipuram for constant guidance, sustained patience, valuable suggestions in the successful completion of this study.

It is my duty to express my heartfelt thanks to Associate Professors of Padmasree College of Nursing,**. Mrs. D.Thatchayani M.Sc. (N)., Ass. Prof. Mrs. D. Nithiya,M.Sc(N),M.Phil(Psy.) Asst. Prof,. Mr. Gopianath,M.Sc (N)., Assprof. Mrs.G.VanisreeM.Sc.(N),Ass.prof.,Mrs.GayathriM.Sc(N).,Mrs.DharaniMsc(N)** for their valuable guidance, moral support and encouragement in conducting and submitting this study.

It is a pleasure and privilege to express deep sense of gratitude to **Prof.J.Sunitha Priyadharshani Msc.,(N)., Principal**, Arun College Of Nursing, Vellore, for validity of the tool and their guidance for the study.

It is pleasure and privilege to express deep sense of gratitude to **Prof. V.J. Bini Paul Msc.,(N)., H.O.D.** Sree Balaji college of nursing, Chrompet, for validity of the tool and their guidance for the study.

I express my special thanks to **Mr. Muthuraman, M.Sc., (Bio Stat.)** Lecturer in Statistics, Padmasree College of Nursing for his expert guidance and assistance in the Statistical analysis.

I express my special thanks to **Librarian of The Tamilnadu DR. M.G.R. Medical University** and Mrs. Tamilselvi, Librarian of Padmasree College of Nursing, Walajabad.

I thank Mr. A. Babu MA, $\overline{\text{MTh}}$ Senior Assistant O/O. Joint Director of Health Services, Kanchipuram for their help in dissertation work.

ABSTRACT

TITLE

A study to assess the effectiveness of selected nursing measures of neonates with low birth weight babies at government head quarters hospital, kanchipuram.

NEED FOR THE STUDY

Birth weight is the single most important factor determining the survival chances of the newborn. Many of the newborn die during their first year of life. In India over 30 percentages of the infants are born with low birth weight. Nearly 75% of the neonatal deaths and 50% of infant's death occurs among low birth weight baby.

WHO (2014) published regarding low birth weight deaths in India reached 380,890 (4.29%) of total deaths. The age adjusted death rate is 27.79 per 100,000 of population ranks 16 in the world.

WHO in 2012 , implemented a plan on maternal, infant and young child nutrition, which specified six global nutrition targets for 2025.this policy brief covers the child target: a 30% reduction of low birth weight.

Low birth weight are immature, they need special nursing care. Nurses are front line care providers they are key persons involved with the care of the low birth weight neonates round the clock.

OBJECTIVES:

1. To assess the health condition of neonate with low birth weight.

2. To evaluate the effectiveness of nursing measures of neonate with low birth weight.

3. To correlate the demographic variables of neonates with low birth weight and the effectiveness of nursing measures.

METHODOLOGY:

Research design : descriptive evaluative research design.

Study setting : government head quarters hospital, kanchipuram.

Sampling technique: the sample was selected by convenient sampling technique (n=30).

Study population: neonates with low birth weight babies.

Study tool: proforma for demographic variables, ongoing assessment tool and observational checklist.

Data collection procedure:

Formal written permission was obtained from the joint director of government head quarters hospital, kanchipuram, and also from the neonatal intensive care unit. the collection was done by the investigator after the brief introduction to mother and rapport was established, consent was obtained from the neonates mother based on the initial assessment followed by selected nursing measures of neonates with low birth weight babies, five days care would be given to the neonates with low birth weight as followed by morning and evening care, and then the final evaluation was done.

Analysis:

Demographic variables were analyzed by using descriptive statistics like mean, standard deviation were analyzed by using inferential statistics like chi-square, paired ‘t’ test.

RESULT:

The result showed that the effectiveness of selected nursing measures of neonates with low birth weight babies was among 30 neonates on initial assessment day was in mild health deterioration 16(53.3%) and severe health deterioration fourteen(46.7%) and 26(86.7%) had normal health condition and four (13.3%) at mild health deterioration on the final evaluation day. The significant result was $P<0.05$. This shows the net benefit of this study.

CONCLUSION:

Selected Nursing measures was effective for the low birth weight babies and thus reduces the risk for severity condition of babies and improve the health status of babies.

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INTRODUCTION

CHAPTER - I

INTRODUCTION

"We need to make a world in which fewer children are born, and in which we take better care of them". – Max born.

Ensuring Child Health, an investment for the future. Newborn is the heritage of the family and newborns health of the nation. The arrival of human life into this world and its subsequent struggle for independent existence has tested the time of all those who take care of the newborn.

WORLD HEALTH ORGANIZATION, (2014) Data published regarding low birth weight deaths in India reached 380,890 or 4.29% of total deaths. The adjusted death rate is 27.79 per 100,000 of population ranks India 16 in the world.

Birth weight is the single most important factor determining the survival chances of the newborn. Many of the newborn die during their first year of life. The infant mortality rate is higher for all low birth weight babies than other babies. The lower the birth weight, the lower is the survival chance of the newborn.

There were 1.8 million infant deaths in the world in 2006. Most of them occurred in developing countries and approximately one half took place during their neonatal period.

Low birth weight babies can be managed at the time of antenatal period. Many mothers go on to enjoy near normal life if their babies were properly managed. Early intervention is important, especially for the management of feeding, handling, cleanliness, prevention from the infection. Mother's knowledge about care of baby reflects the health and nutritional status of the baby. Nurses play the significant role in empowering the mother of low birth weight with reliable method to get relieved of their worries and to join hands with the nurses in care of low birth weight babies. **Indian journal of nursing (2013).**

World health organization (2012), implemented a plan on maternal, infant and young child nutrition, which specified six global nutrition targets for 2025. This policy brief covers the child target: **"a 30% reduction of low birth weight".** The purpose of this policy brief is to increase attention to, investment in, and action for a set of cost-effective interventions and policies that can help member states and their partners in reducing rates of low birth weight.

National health policy in India (2004) had defined three goals namely.

Reduction of infant mortality rate
Reduction of prenatal mortality rate
Reduction of low birth weight.

We are walking a tight robe- trying to save the babies helping them, to grow physically and psychologically intact.

Singh (2011)., reported that India about 30-40% of all babies born in India are low birth weight babies. In India alone 7-10 million low birth weight are born annually. Globally each year 25 million babies are born with low birth weight.

In the past two decades, Low birth weight has increased in white infants, mainly because of an increase in multiple births (often associated with assisted (reproduction) whereas in blacks low birth weight has decreased. Nonetheless, low birth weight and very low birth rates remain highest among black infant.

Despite advances in prenatal and obstetric care, racial disparity in birth weight Persists, thus suggesting the need for novel prevention programmes. A reduction in the racial disparity in mortality is a public health issue reflection in United States national health objectives for the year 2011.

DATA FOR LOW BIRTH WEIGHT (INDIA) 2015

STATES IN INDIA	PERCENTAGE OF LOW BIRTH WEIGHT
Bihar	13.9
Orissa	15.7
west Bengal	22.6
Northeastern	
Arunchal Pradesh	11.7
Assam	11.3
Manipur	7.3
Meghalaya	18.0
Mizoram	9.0
Nagaland	4.2
Sikkim	14.8
Tripura	21.3
western region	
Goa	18.5
Gujarat	17.0
Maharashtra	18.9
Southern region	
Andra Pradesh	18.1
Karnataka	19.4
Kerala	14.8
Tamil Nadu	**11.1**
Union Territorist	
Andaman & Nicobar island	8.3
Chandigarh	12.0
Daman & Diu	-
Delhi	16.7
Lakshadweep	–
Puducherry	17.2

Lead researcher Veena Agarwal (2012), India. Said that one of the major reasons for low birth weight is the life style of would be mothers, especially in the first trimester. With expectant mothers eating less than necessary, the right amount of nutrition fails to reach the baby in the initial stages.

The best way to overcome this loss of nutrition is by eating malted food such as ragi, wheat flour or soya, Aggarwal suggested. Mothers should also increase their protein intake in the second trimester while staying away from alcohol or cigarette and trying to avoid getting stress.

NEED FOR THE STUDY:

UNICEF,(2015) stated that globally , the main causes of neonatal deaths were preterm birth complications (35%), intrapartum related complication (24%) , and sepsis (15%), thus, targeting the time around birth with proven high impact interventions and quality care for small and sick newborns may prevent upto 80% of newborn deaths.

The prevalence of low birth weight exists universally in all population. Low birth weight with high mortality and morbidity continuous to be a major public health problem in India. Low birth weight is one of the most serious challenges in maternal and child health in both developed and developing countries. Low birth weight newborn forms a pediatric priority because they have less chance of survival than babies weighing 2500gm. Half of the prenatal and one third of infant mortality are due to the low birth weight. Low birth weight may lead to serious physical and mental handicap in those who survive.

In India, over 30% of the infants are born with low birth weight. Nearly 75% of the neonatal deaths and 50% of infant deaths occur among low birth weight. Further, the investigator during the clinical experience found more number of low birth weight babies born and admitted in neonatal intensive care unit. Low birth weight newborn faces problems like hypothermia, unable to suckle at the breast and hypoglycemia. Due to lack of immunity and low birth weight newborn are at high risk of having problem with increased chance to acquire infection which later on can

lead to death. Low birth weight babies are immature, they need special nursing care. Nurses are front line care providers they are key persons involved with the care of the low birth weight neonates round the clock.

- **Rajwinder kaur,(2013) India.**

Gretchen lawhon (2012) united states, stated that to investigate the individualized developmental care in reducing low birth weight babies in intensive care unit . they concluded that in hospital with all amenities and nurses specifically trained in individualized developmental care to neonates is effective, so then the complication of low birth weight neonates get reduced.

Homer et al.,(2011), there is a growing area of studies concerned with maternal psychosocial stress and the effect on birth weight. Work related stress was seen to be an important factor in the determination of birth weight, especially for those women who did not want to remain in the work force, thus emphasized the need for personal motivation and physical impact of work to be evaluated reduction in the racial disparity in mortality is a public health issue reflection in United States national health objectives for the year 2011.

Bowen and sehring et.al.,(2013),health and dental problems are common in low birth weight survivors, including neuro sensory handicaps such as cerebral palsy, cognitive deficits or delays, and a variety of chronic health disorders. As a result, the cares of a low birth weight infant possess a considerable challenge to the entire family, especially to the mother, who is typically the primary caregiver.

STATEMENT OF THE PROBLEM :

A STUDY TO ASSESS THE EFFECTIVENESS OF SELECTED NURSING MEASURES OF NEONATES WITH LOW BIRTH WEIGHT BABIES AT GOVERNMENT HEAD QUARTERS HOSPITAL, KANCHIPURAM.

OBJECTIVES

1. To assess the health condition of neonate with low birth weight.
2. To evaluate the effectiveness of nursing measures of neonate with low birth weight.
3. To associate the findings with the demographic variables of neonate with low birth weight and the effectiveness of nursing measures.

OPERATIONAL DEFINITION

Neonate :

Babies within 28 days after delivery.

Assess :

Statistical measurement between initial assessment and final evaluation level of neonates with low birth weight babies by doing selected nursing measures.

Nursing Measures

The care given to the low birth weight neonate by the nursing professional. The nursing measures are care at neonatal intensive care unit, Maintenance of breathing, maintenance of thermoregulation, maintenance of nutrition and hydration, vaccination and follow up care.

Low Birth Weight

Neonates weighing less than 2.5 kg at birth irrespective of their gestational age.

Effectiveness :

It refers to the extent to which the selected nursing measures has achieved the desired effect among neonates with low birth weight babies. It is measured in terms of difference initial assessment and final evaluation.

ASSUMPTION

1. Daily assessment of the neonate enables a nurse to gain thorough knowledge about progress, neonates health condition and will provide guidelines for the nurse to implement a need based care.

2. Nursing measures effectively given will enhance the neonate weight.

LIMITATION

The study was limited to

- Neonates had confinement in Government head quarters hospital, kanchipuram.

- Sample is limited to only 30 low birth weight neonates.

PROJECTED OUTCOME

This study proves that the selected nursing measures given by the investigator is effective and found vital improvements in the health condition of the neonates.

CHAPTER-II

REVIEW OF LITERATURE

CHAPTER - II

REVIEW OF LITERATURE

Good researchers do not exist in the vaccum. Research findings should be an extension of previous knowledge and theory as well as a guide for future research activity. In order for a researcher to build on existing work, it is essential to understand what is already known about a topic. A thorough review of literature provides a foundation upon which to base new knowledge.

Polit and Hungler(2014) state that review of literature is an important step in the development of a research project. It provides readers a background for understanding of what has already been learnt on a topic and illuminates what the significance of the new study is.

The review of literature in this study was organized as follows.

A. Literature related to causes of low birth weight

B. Literature related to management of low birth weight

C. Literature related to prevention of low birth weight

A. Literature related to causes of low birth weight

Barbara J. Stoll (2014) stated that late – onset sepsis in very low birth weight Neonates, the vast majority of infections (70%) were caused by gram – positive organisms, with coagulase – negative staphylococci accounting for 48% infections. Rate of infection was inversely related to birth weight and increased rate of sepsis they concluded that late onset sepsis remains an important risk factor for death among low birth weight babies.

Daniel T. Lackland (2014) To determine whether the increased vulnerability to early – onset renal disease originate through impaired renal development in utero as measured by low birth weight. Among people whose birth weight was less than 2.5 kg, in that 95% are having renal problem compared with

babies who weighed 3 to 3.5 kg. They concluded that low birth weights, which reflect adverse effects on development in utero, contribute to the early onset of renal disease in south cerolina.

John. C (2013) reported that due to the intrauterine infection preterm delivery will occurs. They explained the risk factors for preterm delivery are genital tract infection, chronic amnionitis, repeated spontaneous preterm deliveries. They concluded that by prevention of infection to the mother can reduce the preterm delivery.

Chiolero, A. et., (2013) reported that an association between maternal smoking for low birth weight in Switzerland: they concluded that maternal smoking during pregnancy was closely associated with low birth weight, small for gestational age and preterm birth. They concluded that large proportion of prenatal outcomes could have been prevented in Switzerland if maternal smoking had been avoided.

Chhabra, P. et.al.,(2012), conducted that the prevalence of low birth weight and its determinants in an urban resettlement area of Delhi. Prevalence of low birth weight remains high in the urban under privilege of Delhi: maternal age, parity and weight height are important determinants. Increased age of first birth to more than 20 years can minimize effect of primi parity.

Martin, JA.et.al.,(2012), reported that in United states, smoking during pregnancy continued to decline. No improvement was seen in the timely initiation of prenatal care. The cesarean delivery rate jumped six percent to another all-time high. Whereas the rate of vaginal birth after previous cesarean fell by 13 percent and low birth weight rates continued their steady rise then they concluded that the twinning rate increased, but the rate of triplet and higher order multiple births were down slightly.

Msamanga, Gl. Et.al.,(2012), suggested that an association between low birth weight and infant mortality in children born to human immunodeficiency virus 1-infected mothers in Tanzania. They concluded that the importance of preventing HIV transmission. Even in population with no access to antiretroviral to reduce the

incidence of low birth weight would result in a significant reduction in infant mortality.

Reiss, I .et.al., (2011), reported that an increased risk of broncho pulmonary dysplasia and increased mortality in very preterm infants being small for gestational age. Small for gestational age neonates below 32 weeks gestation are a high-risk group regarding neonatal mortality and neonatal pulmonary morbidity.

Tough, SC.et.al., (2011), suggested that the paternal age associated with an increased risk of low birth weight, preterm delivery, and multiple birth. Paternal age is not a risk of low birth weight or paternal delivery among low risk women.

The increased risk of multiple birth with increased paternal age, regardless of parity, requires confirmation among other population.

Chen, ZL.et.al., (2011), reported that mortality rate and causes of death of premature and low birth weight infant in 18 cities. The investigation at19 hospitals in 18 cities showed that the incidence of premature band low birth weight infant in live birth were 4.9% and 5.1% respectively. The mortality was mainly attributed to the preterm, low birth weight and related diseases. The first six causes of death were respiratory diseases, prenatal asphyxia, infection, scleroderma, congenital malformation and intracranial hemorrhage. The approaches for reducing the mortality rate of premature and low birth weight infant were discussed.

Gorzo, I.et.al., (2010), reported that periodontal disease as a potential risk factor for preterm birth and low birth weight. They concluded that the possible risk factor for low birth weight babies may be the chronic periodontal infection. The publication provides a review recently published evidence of the potential association between periodontal infection and preterm low birth weight.

Lacy, JB.et.al., (2010), suggested that an intravenous immunoglobin for preventing infection in preterm and or low birth weight infants. Intravenous immunoglobin administration results in a 3% reduction in sepsis, intra ventricular hemorrhage or length of hospital stay. They concluded intravenous immunoglobin

administration does not have any significant effect on mortality from any cause or from infection.

Majelantle, RG, et. al., (2009), investigated the socio-economic, biological and behavioural factors influencing low birth weight and prematurity in north Indian. They found that the major positive risk factors for low birth weight: late and less frequent attendance of antenatal care services, having experienced pregnancy termination before, low or no education, unmarried motherhood and place of birth. With regard to prematurity, age, late, less frequent attendance of antenatal care services, unmarried motherhood and place of birth were found to be the major positive risk factors.

Wikinson, DS. et al.,(2009), stated that an impact of perceived stress, major life events and pregnancy attitudes on low birth weight. Intervention with pregnant women, especially those assessing perceived stress and attitudes toward the pregnancy, have the potential to improve pregnancy outcomes. Additional prospective research with pregnant women on the origin and effects of stress, is needed.

Berenson, AB. et. al.,(2009), stated that an inadequate weight gain among pregnant adolescents-risk factors and relationship to infant birth weight. The data suggested that behavioral risk factors are important in the identification of adolescents at greatest risk for inadequate weight gain. Early identification during pregnancy is essential to modify nutritional practices and thus minimize poor obstetric outcomes.

Kogan, MD. et. al.,(2008) suggested that social causes of low birth weight the manifest importance of reducing the incidence of low birth weight is most obvious importance's for the first year of life: low birth weight is the single most important factor affecting infant mortality and morbidity. However, there is growing evidence that the adverse consequences of low birth weight continue throughout the life cycle. This review deals primarily with social causes of low birth weight.

Powell, S.et. al., (2008), suggested that the risk of repeating low birth weight and the role of prenatal care. Prior delivery of a preterm or small for gestational age, low birth weight infant was the strongest predictor of low birth weight delivery in a subsequent pregnancy adequate prenatal care during the second pregnancy did not provide statistically significant protection against the risk of repeat low birth weight. The tendency for women to have repeat low birth weight deliveries despite adequate prenatal care indicates a need for a better understanding of the underlying pathophysiology of preterm and small for gestational age delivery.

Ernest, JM. et. al.,(2008), suggested that causes of low birth weight births in public and private patients. This examination of the cause of low birth weight in the two groups. Idiopathic premature labor was related to 47.1% of private low birth weight births, but only 24.8% of public births; low birth weight terms 26.7%and premature rupture of fetal membranes 33.7% were more common in public low birth weight births than in private births (13.8% and 23.0% respectively) medical problems were related to 16.1% of private and 14.9% of public low birth weight births.

B. Literature related to management of low birth weight

Bhatia, J. (2014), reported that fluid and electrolyte management in the very low birth neonate is critical for survival. The amount of fluid present in the plasma, interstitial fluid, and cellular fluid changes throughout the fetal and neonatal period, presenting a challenging situation. One of the many mechanisms such as evaporation. Low birth weight infants are especially susceptible to this, due to their large body surface area and immature skin, often resulting in hypernatremia, resulting in various other complication. They concluded that Careful monitoring is essential in deciding how to manage these infants.

Joshi, M.et.al.,(2014), suggested the feeding modes and weight pattern among preterm, very low birth weight neonates. They can be effectively fed with early orogastric feeding followed by paladai feeding. They concluded this feeding protocol results in adequate weight gain and early transfer to mother.

Sankaranarayanan, K. et.al.,(2014), compared the coconut oil massage versus mineral oil massage. They suggested that the coconut oil application improves the weight gain velocity in preterm low birth weight and fullterm neonates over and above the benefits of tactile kinesthetic stimulation due to massage alone. They concluded that transcutaneous absorption of vegetable oil result in greater caloric intake and hence a better weight gain.

Abrams, SA. et al.,(2013), reported that the nutritional management of very low birth weight infants. Safe and effective means of fortifying human milk is essential to this essential to the care of very low birth weight infants. The optimal approaches for this fortification and the potential risks related to human milk fortification remain controversial. Limited data are available for the optimal content, initiation and methods for mixing fortifier with human milk.

Rahamathullah, et.al.,(2013), tested the impact of vitamin - A supplementation (two doses; 24,000 IU each) soon after birth in a large, double-blind, randomized, placebo- controlled community trial in rural Tamilnadu. These neonates were followed up bi-weekly to the age of six months. Infant in the vitamine- A, group had a 22% reduction in total mortality compared with those in the placebo group. They concluded that this beneficial effect was more marked in low birth weight infant, particularly in infants less than 2,000gm.

Krouse, AM. (2012), suggested that the family management of breastfeed low birth weight infants. Family plays an important role in the breastfeeding experience and therefore may contribute to the overall success or lack of the experience. This qualitative study used naturalistic injury to describe the family management styles of 13 breastfeeding families of low birth weight infant. The family management style conceptual framework guided this inquiry, with management styles emerging from the families definition of the experience and their management behaviours within their unique sociocultural context. These families described facilitating , identification and obstructing family management styles. They concluded that the identification of district management style, interventions may be developed that will assist these families to achieve their breastfeeding goals.

Tesline, (2012), conducted a study on effectiveness of a planned teaching programme on prevention of hypothermia for mothers of neonates in selected hospital of udupi district. He concluded that planned teaching programme with appropriate audio visual aids is an effective strategy in imparting knowledge to post natal women on prevention of hypothermia.

Bang, et. al.,(2012), conducted feasibility studies and introduced Kangaroo Mother Care in their units. Experience with this modality in ahmedabad has shown significant improvement in weight gain among low birth weight infants without any increases in mortality and morbidity, including sepsis and hypothermia. They concluded that this method was found to be culturally acceptable by the mothers and the health personnel in the unit.

Stevens, D. et.al.,(2011) reported that complications of airway management in very low birth weight infants. Subglottic stenosis is an infrequent complication of endotracheal intubation with current complication are still common, but they are usually amendable to clinical treatment. Bronchoscopy should be performed selectively only in infants with clinical evidence of airway obstruction after extubation.

Martinez, AM.(2011), suggested that management of extremely low birth weight infants – perceptions of viability and parental counseling practices. Obstetric opinions about delivery room resuscitation of extremely low birth weight infants are influenced by birth weight and gestational age thresholds, infant and parental factors. They concluded that there is a limited willingness by physicians to allow a parental role in decision making in the delivery room for extremely low birth weight infants.

Mastrogiannis, DS et. al.,(2010), reported that critical management of the very low birth weight and macrosomic fetus. The two extremes of birth(<1500g and >4000g) require antepartum surveillance and anticipation of complication during labor and delivery. Prognosis for the very low birth weight carries with it inherent neurologic impairement even when cared for under the best of condition. In contrast, the macrosomic fetus enjoys a generally excellent outcome regardless of

management. They concluded that the current concern is too much intervention to avoid a low probability of complications.

Coccia, C. et. al., (2012), suggested that management of extremely low birth weight infants. Better health care of women during pregnancy and delivery, improvement in neonatal intensive therapy and technology had led to a decrease in neonatal mortality and morbidity and to lower limits of birth weight and gestational age survival. This paper refers to the management protocol used in the department of perinatal pathology of the provincial maternity hospital of Milan. They concluded that after the introduction of this protocol the mortality rate of extremely low birth weight babies dropped down to 48%.

Georgieff, MK.et.al., (2011), reported that changes in nutritional management and outcomes of very low birth weight infants. We compared the in-hospital and post discharge, these infants had significantly higher mean growth percentiles and fewer of them had weights and occipitofrontal circumferences below the fifth percentile. They concluded that the follow – up at 4 and 12 months corrected age showed that these infants continued to have significantly higher growth percentiles, and fewer of them had weight below the fifth percentile (49% vs 24%) or major neurologic abnormalities. Infants whose weights were below the fifth percentile had significantly poorer 12-month development outcomes.

Moriette, G .et., al.,(2010), reported about very low birth weight neonates. The results were 70 neonates with birth weight less than 1250 gm were treated at the intensive care unit. Respiratory distress were more severe for these neonates. Assisted ventilation were given. They concluded that the high rate of respiratory sequellae (around30%) suggest that the duration and intensity of assisted ventilation should be reduced as much as possible.

C. Literature related to prevention of low birth weight

Aliyu, MH.et al., (2014), found that the association between high parity and fetal morbidity outcomes. High parity is a risk factor for adverse fetal outcomes. However, the impact of heightened parity is more manifest as shortened gestation

rather than physical size restriction. They concluded that these findings could prove beneficial for counseling women of high parity.

Valero de bernabe, J et. al., (2014), reviewed that low birth weight is one of the main predictors of infant mortality. The global incidence of low birth weight is around 17%, although estimates vary from 19% in the developing countries to 5-7% in the developed countries. They concluded that the incidence in Spain in the associated with uterine malnutrition and socio economic factors medical risks before are during maternal life styles.

Offenbacher, S. et. al. (2014), associated the maternal periodontitis is and prematurity. These studies underscore the need for further consideration of periodontal disease as a potentially new and modifiable risk for preterm birth and growth restriction.

Mercy, G. et., al., (2013), assessed the effectiveness of an information booklet on care of a low birth weight baby. They concluded that the information booklet has enhanced the knowledge and practice of mothers.

Park, JM. et. al., (2012), examined that family factors and social support in the developmental outcomes of very low birth weight, traced the manner by which these selective risks are reflected in the composition of very low birth weight babies, demonstrated how a very low birth weight was fundamental to delays in development, and identified risk factors and potential buffers in this process. They concluded that by providing proper support and care can improve the weight of the baby.

Reichman, NE. et .al., (2012), associated the maternal age and birth outcomes. The multivariate analysis also showed that newborn hospitalization costs increased with maternal age among both blacks and whites. They concluded that the seemingly poorer birth outcomes of teenage mothers appear to result from their adverse socio-economic circumstances, not from young maternal age.

Ashworth, A. et al., (2011), suggested that low birth weight and morbidity from diarrhea and respiratory infection in northeast India. Infant deaths,

hospitalization, and diarrheal morbidity are increased in term low birth weight infants who have only a modest weight deficit. They concluded that prevention of diarrhoeal disease and decreases the stay of hospital can improved the birth weight of baby.

Steketee, RW .et. al., (2010), reported that effective prevention of malaria in pregnant women in malaria-endemic settings may reduce the likelihood of low birth weight by 5-14%, and they concluded that the reduction amount of preventable low birth weight by more than 30%, prematurity, and intrauterine growth retardation in rural Malawi.

Evidence-based interventions to prevent low birth weight, its components (preterm birth and small for gestational age) and their associated morbidity and mortality, with emphasis on community settings

Interventions at country/regional level

- Support for women's empowerment and educational attainment
- Social protection systems (e.g. cash-transfer programmes) for improving health-care visits
- Food-distribution systems for subpopulations at risk of food insecurity
- Improvement of clean and adequate water, sanitation and hygiene
- Support for national salt iodization programmes to ensure that salt consumed by households is adequately iodized (for which there are new guidelines harmonizing iodine levels with reductions in salt consumption)
- Improvement in facility-based perinatal care in regions with low coverage
- Universal simplified perinatal data-collection system with electronic feedback system.

Interventions at community level

- Adequate nutrition for adolescent girls
- Promotion of smoking cessation during and after pregnancy
- Community-based packages of care to improve linkage and referral for facility births
- Intermittent iron and folic acid supplements for women of reproductive age and adolescent girls, in settings where the prevalence of anemia is 20% or higher
- Prevention of malaria during pregnancy

Pre-pregnancy interventions

- Birth spacing
- Pre-conceptional daily folic acid supplementation for reduction of congenital anomalies
- Promotion of smoking cessation

Antenatal care interventions for all women

- Fetal growth monitoring and neonatal size evaluation at all levels of care, integrated into the WHO new antenatal care model
- Daily iron and folic acid supplements for women during pregnancy
- Decrease in non-medically indicated caesarean delivery and induction

Postnatal care interventions to all women

- Early initiation and promotion of exclusive breastfeeding at community and facility level
- Adequate birth spacing

Antenatal care interventions to selected women

- Balanced protein-energy supplementation
- Daily calcium supplementation for women in settings with low calcium intake
- Uterine cervical cerclage (or cervical stitch) in women with previous preterm birth and short cervix
- Antiplatelet agents before 16 weeks for women at risk of pre-eclampsia
- Progesterone therapy for women at risk of preterm birth
- Antenatal single-dose corticosteroids for accelerating fetal lung maturity in women in early initiation of labour
- Antibiotic treatment for women with bacterial vaginosis and asymptomatic bacteriuria
- Interventionist care in severe pre-eclampsia before term

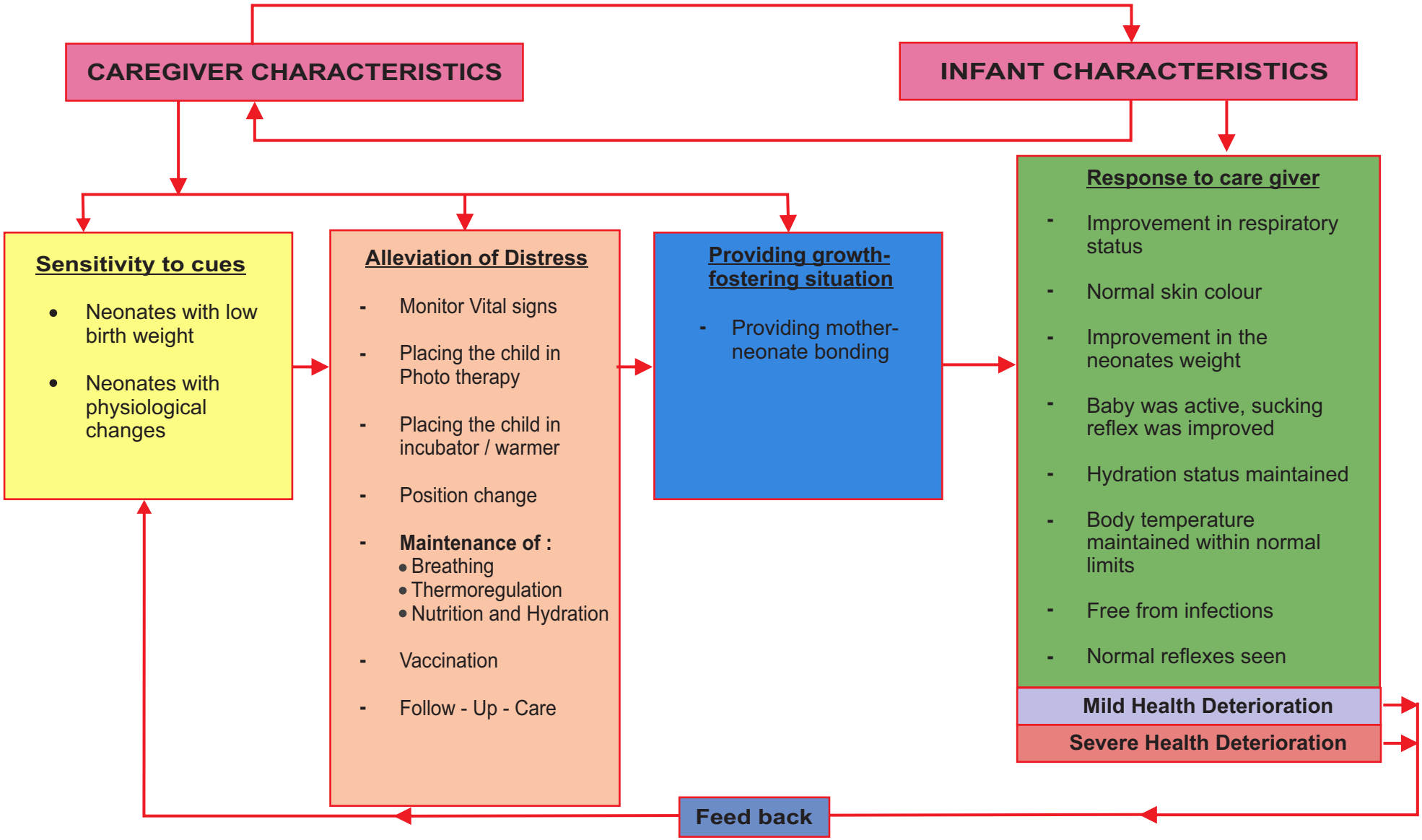

Fig.2.1 - KATHRYN BARNARDS CAREGIVER - CHILD INTERACTION MODEL MODIFIED VERSION (2009)

CONCEPTUAL FRAME WORK

KATHRYN BARNARDS CAREGIVER – CHILD INTERACTION MODEL MODIFIED VERSION (2009)

A conceptual frame work or model is made up of concepts that are mental image of a phenomenon. These concepts are linked together to express their relationship between them.

The study designed to elicit the nursing care of low birth weight babies. The concept for the study is based on Kathryn barnard (1977), modified version-2009, parent/ caregiver-child interaction model. A major focus of barnyards work was the development of assessment tool to evaluate the child health, growth and development. Barnard stated that the caregiver- infant system was influenced by individual characteristics of each member and that the individual characteristics modified to meet the needs of the system.

The theory components are as follows;

A) Care giver characteristics

B) Infant characteristics

A) CARE GIVER CHARACTERISTICS

Caregiver is the nurse whose role is vital. Caregiver must be able to accurately read the cues given by the neonates.

1) Sensitivity to cues

Cues which we have seen by the neonates is the basics for care which includes, decreased body temperature, inactive, sluggish reflexes, irritable, change in colour of the skin, altered sleep pattern, weak cry. Only when the cues are reduced that the caregiver task is achieved there by bringing the expected change in the neonate.

2) Alleviation of distress

The effectiveness of caregiver in alleviation the distress of infants depends on several factors as,

a) Recognizing that neonate is in distress

b) Appropriate action to alleviate distress

c) Put the knowledge into action.

The investigator identified the birth weight of the neonate and planned to give care for the neonate.

The neonate is kept under the incubator and warmer and babies with hyperbilirubinemia kept under the phototherapy. Care must be taken to change the position every fourth hour, the genitals and the eyes should be covered, temperature recorded every fourth hour, hydration status maintained, baby given to mother for feeding, intravenous fluids were administered, skin cleaned with warm water, weight recorded daily and cord care and genital care give care for the neonate.

CARE AT NEONATAL INTENSIVE CARE UNIT:

1. The NICU should be warm, free from excessive sound smoothing light.
2. Protection from infection should be ensured by aseptic measures and effective hand washing.
3. Rough handling and painful procedure should be avoided.
4. Baby should be placed on soft comfortable, nestled and cushioned monitoring of the baby's clinical status are vital aspects of management which depends upon the gestational age of the baby.
5. Baby can be placed in prone position during care.

MAINTENANCE OF BREATHING:

1. Baby should be positioned with neck slightly extended and air passage to be cleared by gentle suctioning to remove the secretion, if needed. Precaution should be taken to prevent aspiration of secretion and feeds.

2. Concentration of oxygen to be maintained to have sodium oxide between 90 and 95% and potassium oxide between 60 and 80mm of Hg.

3. Baby's respiration rate, rhythm, signs of distress, chest retraction, nasal flaring, apnea, cyanosis, oxygen saturation, etc. to be monitored at frequent interval.

4. Tackling stimulation by sole flaring can be provided to stimulate respiratory effort.

5. Chest physiotherapy by percussion, vibration and postural drainage may be needed to loosen and remove respiratory secretion.

6. Desirable level of arterial blood gas values should be-a) potassium oxide 55-65 mmHg b) potassium carbonate paco2 35-45 mmHg and c) Ph 7.35-7.45.

MAINTENANCE OF THERMOREGULATION

- Baby should be received in a pre warmed radiant warmer or incubator. Environmental temperature should be maintained according to baby's weight and age.

- Baby skin temperature should be maintained 36.5 to 37. 5^0 c.

- Baby birth weight of less than 1200gm should be cared in the NICU incubator with 60 to 70% humidity, oxygen and thermo neutral environment for better thermal control and prevent heat loss

- Alternatively the baby should be managed under radiant warmer with protective plastic cover.

- The baby should be placed naked. If it is possible maintain temperature of the entire room.

- The baby cot should be kept warm. Rubber hot water bottle may be usable for the purpose. The bottle should be filled with hot not boiled water those should be covered with cloths.

- The temperature of the cot should be checked so as to maintain it up to 85^0 F.

- Kangaroo mother care can be provided when the baby's condition stabilized. Baby should be clothed with frock, cap, socks, and mittens while giving kangaroo care.

- Bathing should be delayed

MAINTENANCE OF NUTRITION AND HYDRATION:

- Caloric needs of non- growing LBW babies during first week of life are 60 kcal / kg / day on 7^{th} is to be stepped up gradually to 100 on 14^{th} day and about 120-150 on 21^{st} day, to maintain satisfactory growth.

- Human milk is the first choice of nutrition for all LBW babies. Colostrum's, hind milk, foremilk, and preterm milk help faster growth of baby.

- If breast milk is not available cow's milk in proportion of 1:1 (milk: water)for 1^{st} month and 2: 1 during second month is an alternative substitute. One teaspoon glucose should be added to 50ml of milk prepared for the first 10 days and there after reduce to 1 teaspoon to 100ml milk.

- ❖ Those babies who have good sucking and swallowing reflexes should start breastfeeding as early as possible.

- ❖ Expressed breast milk can be given through spoon and bowl at 2 hrs interval. Katori - spoon or paladai can also be for feeding the preterm babys.

- ❖ Gavages or nasogastric tube feeding can be given with expressed breast milk to all babies with poor sucking reflex.

- ❖ Intravenous dextrose less than 1200gm or sick babies

- ❖ Starvation to be avoided and early enternal feeding should be started as soon as the baby is stable.

Commencement early feeding between 1-2 hours of birth is now widely recommended, the interval of feeding ranges from hourly in extreme prematurity to 3 hourly feeds in babies born after 36 weeks. The baby when kept in the cot, should be placed on one side with the head raised a little to prevent regurgitation.

Additional supplements: supplement of minerals and vitamin after 2 weeks should be started.

1. vitamin-A 25000 IU
2. Vitamin-D-600 IU
3. vitamin-c-50 mg.
4. vitamin-B1-0.5 mg
5. folic acid -65 mg.
6. Calcium and phosphorous supplementation also essential. A liquid preparation of iron 1-2mg/kg/day should be in the second or 3rd week.

7. IV gamma globulin therapy (400mg/kg/dose) may be given to prevent infection in selected cases.

8. Very LBW babies (<1500gm, <32 weeks gestation) need vitamin- E.

FLUID REQUIREMENT FOR LBW BABIES.

Days	<1000 gm	1000-1500gm	>1500gm
1st and 2nd	100-120ml	80-100ml	60-80ml
3ed and 4th	130-140ml	120-130ml	90-100ml
5th and 6th	150-160ml	140-150ml	110-120ml
7th and 8th	170-180ml	10-170ml	130-140ml
9th day onwards	190-200ml	180-190ml	150-160ml

- the first day fluid requirement ranges from 60 to 100 ml / kg (the difference from each categories being 20 ml/kg each)

- The daily increment in all groups is around 10 to 15ml per kg till day 9. need extra requirement in case of phototherapy (20-40ml/kg/day) and radiant warmer (40-80ml/kg/day)

VACCINATION OF LBW:

If the LBW baby is not sick, the vaccination schedule is the same as for the normal babies. BCG, OPV, and HBV vaccine should be given at the time of discharge.

FOLLOW – UP CARE:

- ❖ Baby's condition and progress to be explained to the parents to reduce their anxiety. Treatment plan should be discussed.

- ❖ Parents should be informed about the care of baby, after discharge at home. Need for warmth, breast feeding, general cleanliness, infection prevention measures, environmental hygiene, and follow up plan, immunization etc should be explained to the parents.

- ❖ Mostly healthy infant with a birth weight of 1800gm or more and gestational maturity of 3 weeks or more can be managed at home. Mother should be prepared mentally and trained to provide essential care to the preterm baby at home.

- ❖ At the discharge the baby should have daily steady weight gain with good vigor and able to suck and maintain warmth. Ultimate survival of the baby depends upon continuity of care. The community health nurse visit the family every week for a month and provide necessary guidance and support.

Providing growth fostering situation:

The ability to initiate growth – fostering activities by promoting the mother child bonding by means of kangaroo mother care and during breast feeding.

INFANT CHARACTERISTICS:

Interventions are continuously carried out and released as infant characteristics, which imply neonatal responsiveness to care giver. Here it refers to maintaining the weight of the neonate and preventing infections as positive response.

The caregiver characteristics are made based on infant characteristics. It is a process where the caregiver intervention is based on the neonates response.

CHAPTER-III

METHODOLOGY

Clarity of cues:

Infants send cues of many kinds like newborn behavior, feeding, sleeping pattern, temperature and neonates ability to adapt to his/her caregiver and environment.

b) Responsiveness to caregiver:

If the infant is non- responsive to the behavioural cues of his/her caregiver, adaptation is possible. Response given to the caregiver as maintenance of the weight and prevention of infection and expected changes in physical status.

CHAPTER – III

METHODOLOGY

This chapter deals with the methodology adopted for the study, including the description of research design, setting, population of the study, sample size, sampling technique, data collection and instruments.

RESEARCH DESIGN

Descriptive evaluative research design was adopted to evaluate the nursing care of neonate with low birth weight. The needs, problems of neonates were assessed and then nursing care was provided.

SETTING

The setting of the study was Government Head Quarters Hospital at Kanchipuram. It is a 443 bedded hospital; per month 140 deliveries are conducting in this hospital. In this approximately 1-2 babies are born per day with low birth weight.

VARIABLES

Independent variable :

Independent variable of the study is selected nursing measures.

Dependent Variable :

Dependent variables of the study were neonates with low birth weight.

POPULATION

The population of the study comprised of all low birth weight babies who were admitted in newborn intensive care unit in government head quarters hospital Kanchipuram.

SAMPLING TECHNIQUE

Convenient sampling method was adopted for selection.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA

a. Babies who are having low birth weight

b. Babies who are admitted in kanchipuram government head quarter's hospital

EXCLUSION CRITERIA

a. Premature infants

b. Babies whose birth weight is above 2.5kg

c. Babies who are critically ill

SAMPLE SIZE

The total number of sample was 30 neonates with low birth weight.

INSTRUMENT

Details of the tool used in this study are given below

Section-1: Demographic variables

Questionnaire used for collecting data about the demographic variables

Section-2: Ongoing assessment tool

Rating scale was used to monitor the health condition of the low birth weight neonates.

Section-3: Observational checklist

Part A - General checklist

Part B - Nursing care of neonates with low birth weight.

DATA COLLECTION

The study was conducted in Government Head Quarters Hospital at Kanchipuram. The data was collected for a period of six weeks by using the prepared tools. The tools were developed based on the objectives of the study.

TOOL DESCRIPTION

This chapter deals with the description of the tools, repot of pilot study, reliability, validity, informed consent, scoring interpretation, plan for data analysis and results.

DESCRIPTION OF THE STUDY

Details of the tools used in this study are given below.

1. Proforma for demographic variables

2. Ongoing assessment tool

3. Observational check list

SECTION-1- PROFORMA FOR DEMOGRAPHIC VARIABLES

In this section, information on the demographic variables such as age of the neonates, sex of the neonates, birth order of the neonates, birth weight, type of birth, education status of the father, education status of the mother, employment of the father, mother, type of family and family income, marital status of the parents and health information sources are included.

SECTION-2- ONGOING ASSESSMENT TOOL

Rating scale was used to monitor the health condition of the low birth weight neonates.

This section consists of ten numbers of questions regarding the low birth weight neonates. Each question carried maximum score of three, minimum score is one, and the total number of score is thirty.

SECTION-3- OBSERVATIONAL CHECK LIST

Part A – General checklist.

Part B - Nursing care of neonates with low birth weight.

In this section the general assessment scale was used to assess the health condition of the neonate with low birth weight. It consists of five numbers of variables such as temperature, pulse rate, respiration, feeding and anthropometric measurement. The nursing care includes maintenance of breathing, maintenance of thermoregulation, maintenance of nutrition and hydration, vaccination, and follow up care.

PILOT STUDY

Pilot study was conducted to find out the effectiveness of selected nursing measures of neonates with low birth weight babies at Government Head Quarters Hospital, Kanchipuram. For a period of seven days, to find out the feasibility of the study and to plan for data analysis on the basis of pilot study the instrument and the interventions are modified and refined. The pilot study subjects were excluded from the main study.

RELIABILITY

The assessment tool was developed by the investigator based on the review of literature, which was evaluated and accepted by experts of the research committee. The content of the tool was found to be reliable. $r = 0.83$.

VALIDITY

Validity were obtained from the research scholars.

INFORMED CONSENT

The dissertation committee prior to the study approved the research proposal. Permission was obtained from the head of the child health- nursing department and from the government head quarters hospital, Kanchipuram. Permission was obtained from the joint director, medical officer and staff nurse in charge. The consent form obtained from each neonate's mother before starting the data collection. Assurance was given to the mothers that confidentially would be maintained.

DATA COLLECTION PROCEDURE

Formal written permission was obtained from the Joint Director of Government head quarters hospital, kanchipuram, and also from the neonatal intensive care unit. The data collection was done for a period of 4 weeks.

The data collection was done by the investigator after the brief introduction to mothers and rapport was established, consent was obtained from the neonates mothers based on the initial assessment followed by selected nursing measures of neonates with low birth weight babies and final evaluation was done.

The obtained data were interpreted by the following procedure

$$\text{Scoring interpretation} = \frac{\text{Obtained score}}{\text{Total Score}} \times 100$$

Based on the information data were classified as follows

Less than 50% - severe health deterioration

51 to 70 % - mild health deterioration

71 to 100% - normal health condition

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

The description statistical analysis method was used to find out the total number of score, percentage of score, mean and standard deviation. The paired 't' test were adopted and interpreted with each and every score.

SI. No	Data Analysis	Methods	Remarks
1.	Descriptive analysis	The total number of score, percentage of score, mean and standard deviation	To describe the demographic variables of the neonate with low birth weight and to assess the effectiveness of neonate with low birth weight.
2.	Inferential analysis	Paired 't' test	To compare the health condition of the neonate on first and fifth day.
3.	Inferential analysis	Chi- square test	To analysis the association between demographic variables and nursing care for neonates with low birth weight

Section – A

Distribution of the demographic variables of the neonates with low birth weight.

Section- B

Frequency and percentage distribution of initial assessment score and final evaluation score of neonate with low birth weight.

Section – C

Mean and standard deviation of initial assessment and final evaluation scores of neonate with low birth weight.

Section – D

Improvement score mean and standard deviation of initial assessment and final evaluation score and effectiveness of nursing care of neonate with low birth weight.

Section – E

Association between demographic variables of mothers and effectiveness of nursing care of neonate with low birth weight.

Table 4. 1- Frequency and percentage distribution of demographic variables among neonate with low birth weight

n= 30

SI No.	Demographic variables	frequency	percentage
1.	**Age of the baby**		
	a. upto 2 days	11	36.7
	b. 2 days – 5 days	11	36.7
	c. 5 days and above	8	26.6
2.	**Gender**		
	a. Male	16	53.3
	b. Female	14	46.7
3.	**Birth order of the neonate**		
	a. First born	9	30.0
	b. Second born	10	33.4
	c. Third born	7	23.3
	d. Fourth born	4	13.3
4	**Birth weight(kg)**		
	a. 1.2	2	6.6
	b. 1.5	3	10.0
	c. 1.6	2	6.7
	d. 1.7	3	10.0
	e. 1.8	4	13.3
	f. 1.9	5	16.7
	g. 2.0	5	16.7
	h. 2.1	2	6.7
	i. 2.2	4	13.3
5.	**Type of birth**		
	a. Vaginal delivery	24	80.0
	b. Cesarean delivery	6	20.0

SI No.	Demographic variables	frequency	percentage
6.	**Education status of the father**		
	a. Illiterate	15	50.0
	b. Primary school level	9	30.0
	c. High school level	4	13.4
	d. Graduate	1	3.3
	e. Professionally qualified	1	3.3
7.	**Education status of the mother**		
	a. Illitrate	16	53.3
	b. Primary school level	10	33.3
	c. High school level	2	6.7
	d. Graduation	2	6.7
8.	**Occupation of the father**		
	a. Private or bussiness	3	10.0
	b. Coolie	27	90.0
	c. Unemployed	-	-
9.	**Occupation of the mother**		
	a. Private or bussiness	-	-
	b. Coolie	6	20.0
	c. Unemployed	24	80.0
10.	**Type of family**		
	a. Nuclear family	25	83.3
	b. Joint family	5	16.7
11.	**Family income**		
	a. 1000 per month	20	66.7
	b. 1001 – 3000 per month	7	23.3
	c. 3001 – 5000 per month	3	10.0
12	**Marital status of parents**		
	a. Consanguineous marriage	19	63.3
	b. Non consanguineous marriage	11	36.7
13	**Health information through**		
	a. Media (radio, TV, movie)	14	46.7
	b. Health personnel		23.3
	c. Friends & neighbours	7	30.0
		9	

Table 4.1 reveals that out of 30 neonates, 11 (36.7%) neonates were between the age upto 2 days and 11(36.7%) of neonates were 2 days 5 days and 08 (26.8%) were between the age of 5 days and above. 16(53.3%) were male, 14 (46.7%) were female. 09 (30.0%) were first born, 10(33.4%) were second born, 07 (23.3%) were third born, 04 (13.3%) were fourth born.

Regarding the birth weight 2(6.7%) of neonates birth weight was 1.2kg, three(10.1%) were1.5 kg, 02(6.7%) were 1.6kg, 03(10.0%) were 1.7 kg, 04(13.3%) were 1.8kg, 05(16.7%) were 1.9 kg, 05(16.7%) were 2.0 kg, 02(6.7%) were 2.1 kg,04(13.3%) were 2.2kg. 24(80.0%) born by vaginal delivery, 06(20.0%) born by cesarean delivery.

Considering the occupation of the parents 03 (10.0%)of neonates father were private or business, 27 (90.0%) were coolie. 06(20.0%) of the mothers were coolie, twentyfour (80.0%) of the mothers were unemployed.

25 (83.3%) belonged to nuclear family,05 (16.7%) were joint family. nineteen (63.3%) were consanguineous marriage, 11 (36.7%) were non consanguineous marriage. 15 (50.0%) of the neonate father were illiterate,09 (30.0%) were at primary school level, four (13.4%) were at high school level, one (3.3%) was professionally qualified. 16(53.3%) of neonates mothers were illiterate, ten (33.3%) were at primary school level,02 (6.7%) were at high school, 02(6.7%) were at graduate level.

Regarding the information 14 (46.7%) got information through media (radio, TV, movie),07 (23.3%) from health personnel, nine (30.0%) from friends and neighbours.

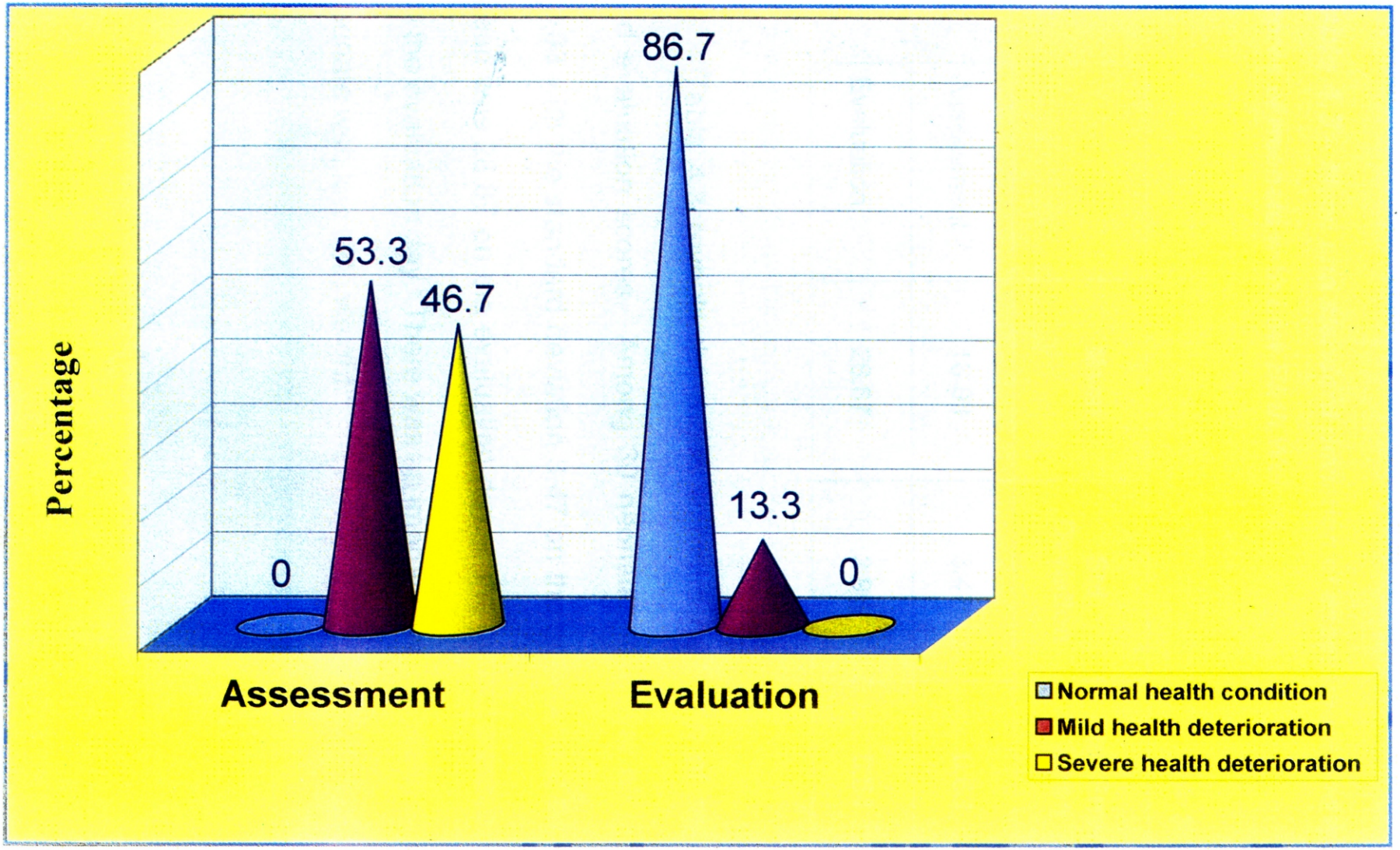

Fig.4.1 - Frequency and Percentage distribution of assessment and evaluation score for neonate with Low Birth Weight

Table 4.2 – frequency and percentage distribution of assessment and evaluation score of neonate with low birth weight

n=30

Health status	**Initial Assessment**		**Final Evaluation**	
	N	**%**	**N**	**%**
Normal health condition	-	-	26	86.7
Mild health deterioration	16	53.3	4	13.3
Severe health deterioration	14	46.7	-	-

Table 4.2 reveals that the progress in health condition of the neonate with low birth weight, among 30 neonates 16(53.3%) were in mild health deterioration and 14 (46.7%) were in severe health deterioration in the initial assessment day. In evaluation 26 (86.7%) were in normal health condition, 04 (13.3%) were in mild health deterioration. While comparing the health condition from initial assessment day to the final evaluation day the health condition of the neonates were improved.

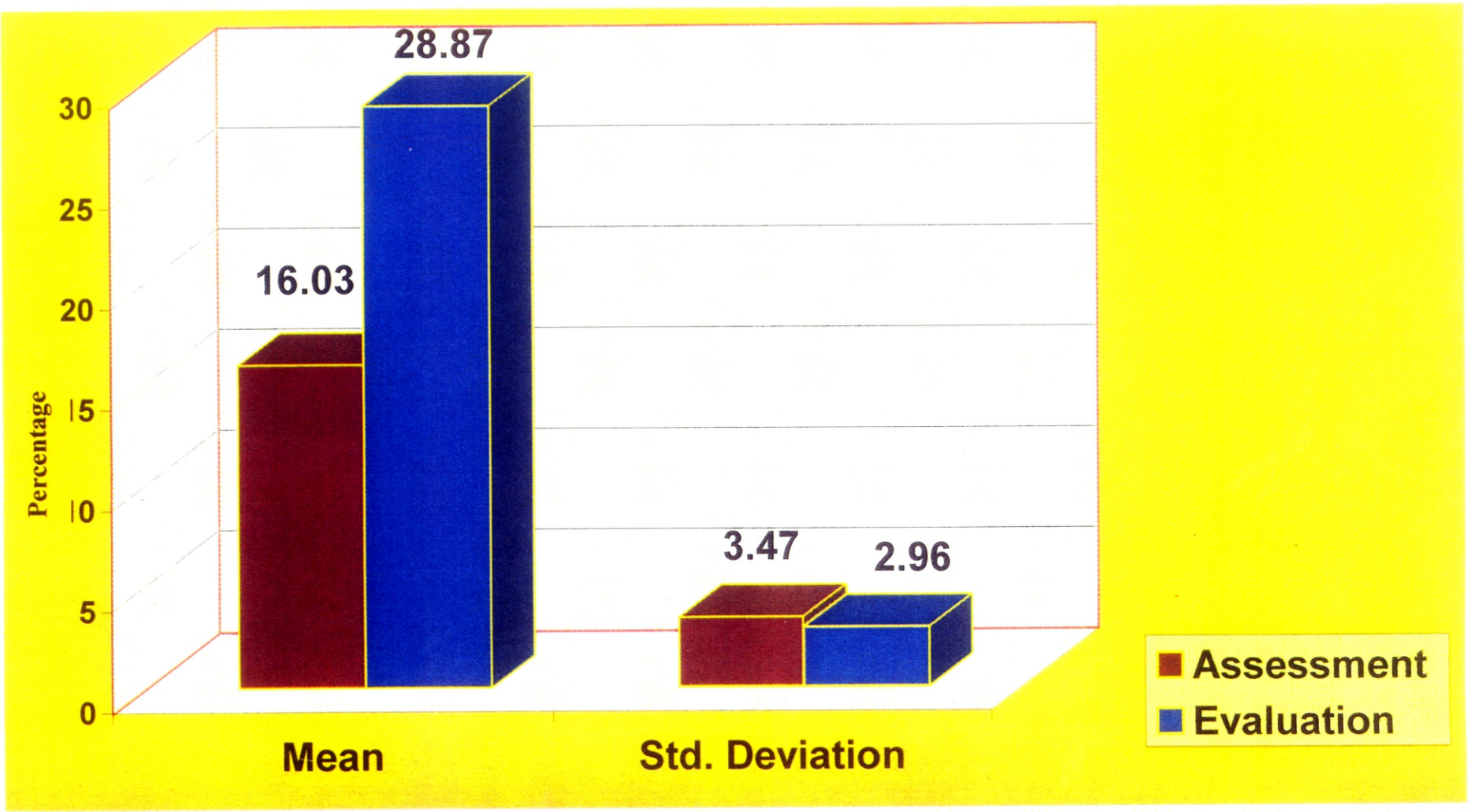

Fig.4.2 - Mean and standard deviation of assessment and evaluation scores of neonate with Low Birth Weight

Table 4.3 – mean and standard deviation of initial assessment and final evaluation scores of neonate with low birth weight

n=30

	Mean	**Std. Deviation**	**Std. Error Mean**
Initial Assessment	16.03	3.47	0.60
Final Evaluation	28.87	2.96	0.54

Table 4.3 reveals the mean standard deviation of initial assessment and final evaluation score. Among 30 neonates, the over all mean was 16.03 with the standard deviation 3.47 on the initial assessment day and the mean was 28.87 on the final evaluation day. The overall mean was higher on the final evaluation day. There was an improvement in health condition of neonate with low birth weight.

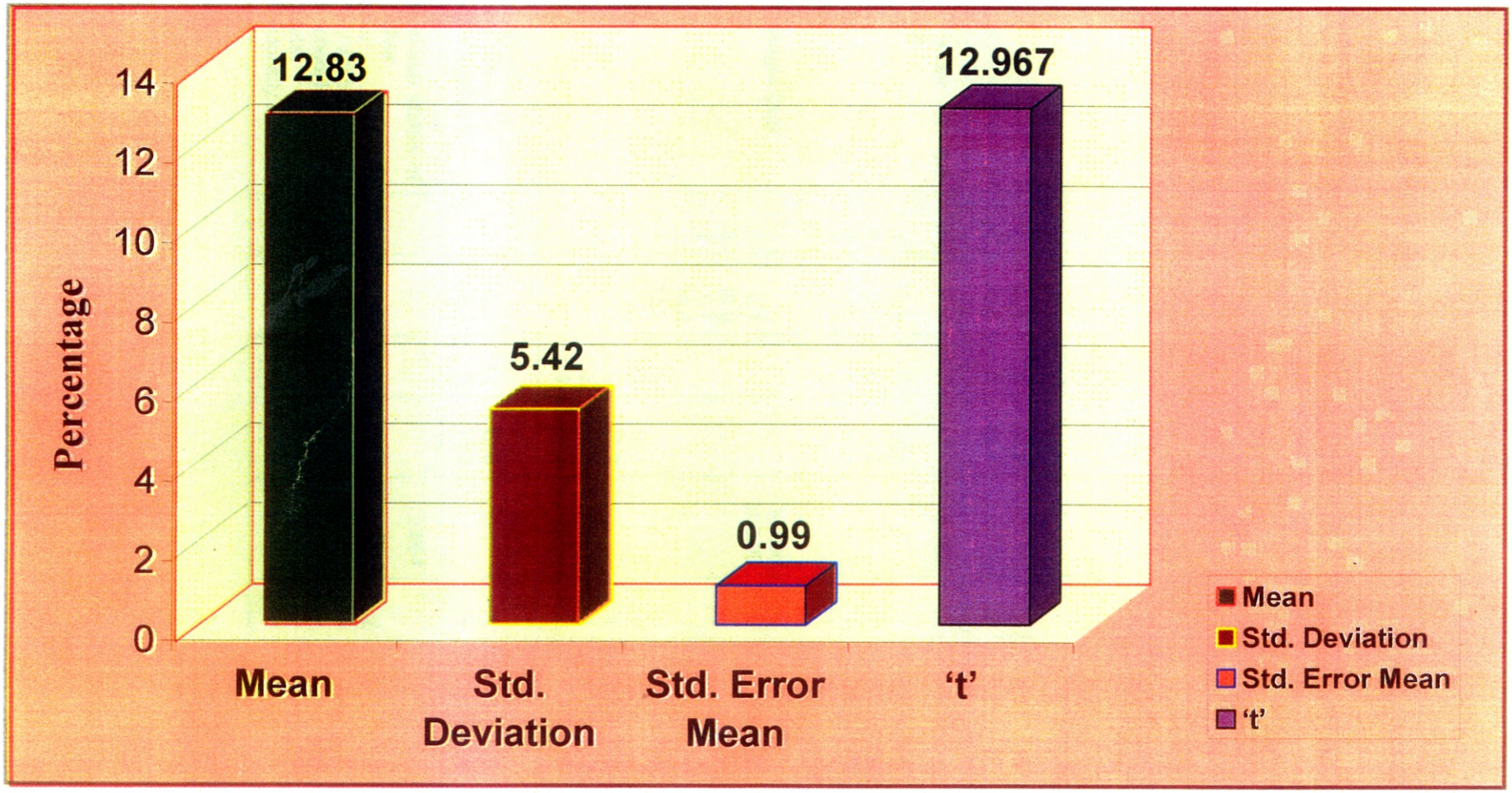

Fig.4.3 - Improvement score Mean and Standard deviation of assessment and evaluation score of effectiveness of nursing care of neonate with Low Birth Weight

Table 4.4 – improvement score mean and standard deviation of initial assessment score and effectiveness on nursing care of neonate with low birth weight

	Mean	**Std. Deviation**	**Std. Error Mean**	**‘ t’**
Improvement score	12.83	5.42	0.99	12.967

P< 0.05

Table 4.4 reveals that the improvement between initial assessment score and final evaluation score. The mean was 12.83 with the standard deviation of 5.42. The calculated value, there was a significant association between the selected nursing measures of neonate with low birth weight. This proves that there was an improvement in health condition of neonate with low birth weight.

Table 4.5 Association between demographic variables of mothers and effectiveness of selected nursing measures of neonate with Low Birth Weight

n=30

Demographic variable	Initial Assessment score					Final Evaluation score				
	Severe health deterio-ration		Mild health deteri-oration		χ^2	Mild health deterio-ration		Normal health condition		χ^2
Age of the neonate	**N**	**%**	**N**	**%**		**N**	**%**	**N**	**%**	
Age of the baby										
Up to 2 days	5	16.7	6	20.0		1	3.3	10	33.3	
2 days – 5 days	6	20.0	5	16.7	0.551	1	3.3	10	33.3	1.285
5 days and above	3	10.0	5	16.7		2	6.7	6	20.0	
Gender										
Male	8	26.7	8	26.7	0.153	2	6.7	14	46.7	0.021
Female	6	20.0	8	26.7		2	6.7	12	40.0	
Birth weight (Kg) neonate										
First born	4	13.3	5	16.7		1	3.3	8	26.7	
Second born	4	13.3	6	20.0	0.523	1	3.3	9	30.0	0.611
Third born	4	13.3	3	10.0		1	3.3	6	20.0	
Fourth born	2	6.7	2	6.7		1	3.3	3	10.0	
Birth weight (Kg)										
1.2	2	6.7	-	-	30.000			2	6.7	7.500
1.5	3	10.0	-	-	p>0.05			3	10.0	p>0.0
1.6	2	6						2	6.7	5
1.7	3	7						3	10.0	
1.8	4	10.0						4	13.3	
1.9		13.3	5	16.7		1	3.3	4	13.3	
2.0			5	16.7		1	3.3	4	13.3	
2.1			2	6.7		-	-	2	6.7	
2.2			4	13.3		2	6.7	2	6.7	
Type of birth										
Vaginal delivery	12	40.0	12	40.0	0.536	4	13.3	20	66.7	1.154
Cesarean delivery	2	6.7	4	13.3		-	-	6	20.0	
Educational status of the father										
Illiterate	8	26.7	7	23.3	2.054	3	10.0	12	40.0	1.538
Primary school	4	13.3	5	16.7		1	3.3	8	26.7	
level	2	6.7	2	6.7		-	-	4	13.3	
High school level			1	3.3		-	-	1	3.3	
Graduate			1	3.3		-	-	1	3.3	
Professionally qualified										

Demographic variable	Initial Assessment score					Final Evaluation score				
	Severe health deterio-ration		Mild health deteri-oration		χ^2	Mild health deterio-ration		Normal health condition		χ^2
Education status of the mother										
Illiterate	9	30.0	7	23.3		3	10.0	13	43.3	1.118
Primary school	4	13.3	6	20.0		1	3.3	9	30.0	
level			1	3.3	2.528	-	-	2	6.7	
High school level	1	3.3	2	6.7		-	-	2	6.7	
Graduate										
Occupation of the father										
Private of business	1	3.3	2	6.7	0.238	-	-	3	10.0	0.513
Collie	13	43.3	14	46.7		4	13.3	23	76.7	
Unemployed										
Occupation of the mother										
Private of business	11	36.7	14	46.7	0.429	3	10.0	22	73.3	0.231
Collie	3	10.0	2	6.7		1	3.3	4	13.3	
Unemployed										
Type of family										
Nuclear family	11	36.7	14	46.7	0.429	3	10.0	22	73.3	0.231
Joint family	3	10.0	2	6.7		1	3.3	3.3	13.3	
Family income										
Rs.1000 per	10	33.3	10	33.3		1	3.3	19	63.3	
month	3	10.0	4	13.3	0.344	3	10.0	4	13.3	6.944
Rs.1001 – 3000										>
per month										0.05
Rs.3001 – 5000	1	3.3	2	6.7				3	10.0	
per month										
Rs.5001 & above										
Marital status of parents										
Consanguineous										
Marriage	11	36.7	8	26.7	2.625	2	6.7	17	56.7	
Non										0.353
consanguineous	3	10.0	8	26.7		2	6.7	9	30.0	
Marriage										
Health information through										
Media										
(Radio, TV,	9	30.0	5	16.7	3.948	3	10.0	11	36.7	2.184
Movie)										
Health personnel	3	10.0	4	13.3		1	3.3	6	20.0	
Friends &										
Neighbours	2	6.7	7	23.3		-	-	9	30.0	

$P < 0.05$

Table 4.5 reveals the association between demographic variables of mothers and effectiveness of nursing care of neonate with low birth weight. This shows that there is no significant association between the demographic variables such as age of the baby, gender, birth order of the neonate, type of birth, educational status of the father and mother, occupation of the father and mother, type of family, marital status of parents and health information.

There is a significant association between the birth weight and nursing care. Because of lack of awareness regarding antenatal diet, the mothers were undernourished during the antenatal period. This causes reduction in the birth weight of the neonate.

There is a significant association between family income and nursing care. Because of poor family income they do not get adequate nutrition this causes reduction in the birth weight of the neonates.

CHAPTER-V

DISCUSSION

CHAPTER – V

DISCUSSION

The study was conducted to determine the effectiveness of selected nursing measures of neonate with low birth weight. A total of 30 samples were selected for the study. The health condition of each and every neonate was assessed day to day. Based on the assessment the selected nursing measures was planned and implemented for the neonate with low birth weight.

The first objective was to assess the health condition of neonate with low birth weight it was illustrated in table 4.2 it revealed that among 30 neonates 16 (53.3%) were in mild health deterioration and 14 (46.7%) were in severe health deterioration on the initial assessment day. Among 30 neonates, the overall mean was 16.03 with the standard deviation of 3.47 on the initial assessment day.

Joshi M. et. al., (2005), conducted a study on feeding modes and weight pattern among preterm very low birth weight neonates. They concluded that very low birth weight neonates can be effectively fed with early orogastric feeding followed by paladai feeding. This feeding protocol results in adequate weight gain and early transfer to mother.

The second objective was to evaluate the effectiveness of selected nursing measures for the neonate with low birth weight it was illustrated in table 4.3 it revealed that before giving nursing care in the initial assessment day the overall mean is 16.03 with the standard deviation of 3.47 in the final evaluation day after giving nursing care the overall mean is 28.87 with the standard deviation of 2.96 The important Score between initial assessment and final evaluation shows the mean of 12.83 with the Standard deviation of 5.42. The calculated value was less than the tabulated value. There was significant association between the nursing care for neonate with low birth weight and there is an improvement in the health condition and no reduction in the weight.

Asha P. et.al., (2012) conducted a study on incidence of hyperbilirubinemia and effectiveness of nursing on identified needs. They found that the protocol was acceptable and usable for improving care for practicing nurses in the pediatric, postnatal wards and neonatal intensive care unit.

The third objective was to find out the association between the demographic variables and the effectiveness of nursing measures there was statistically there was no significant association between the nursing care and the demographic variables such as age of the baby, gender, birth order of the neonate, type of birth, educational status of the father and mother, occupation of the father and mother, type of family, marital status of parents and health information sources. The overall findings of the study reveal that nursing care of neonate with low birth weight was effective and brought about significant improvement in the health condition of the neonate.

There is a significant association between the birth weight and nursing care. Because of lack of awareness regarding antenatal diet, the mothers were undernourished during the antenatal period. This causes reduction in the birth weight of the neonates.

There is a significant association between family income and nursing care. Because of poor family income they do not get adequate nutrition, this causes reduction in the birth weight of the neonate.

CHAPTER-VI

SUMMARY

CHAPTER – VI

SUMMARY

Descriptive evaluative research design was adopted to evaluate the effectiveness on selected nursing measures of neonate with low birth weight. Individualized nursing measures was provided to neonates those who met the inclusion criteria. The study was conducted at government head quarters hospital, Kanchipuram. The convenient sampling technique was administered and sample size determined as thirty.

Ongoing assessment was done with the rating scale prepared to analyze the health condition of the neonate with low birth weight and the standard nursing care was prepared to render care as changing the position every two hours, maintenance of breathing, maintenance of thermoregulation, nutrition and hydration, vaccination, and follow up care.

The progress in health condition of the neonate with low birth weight that reveals that among 30 neonates 14 (46.7%) were in severe health deterioration and 16 (53.3%) were in mild deterioration on the initial assessment day. Among 30 neonates 26 (86.7%) had normal health condition and four (13.3%) at mild health deterioration on the final evaluation day. This showed there is a progress in the health condition of the neonates, there was no reduction in the weight of the neonate, and there was an improvement in the activity and feeding. This proved that the selected nursing measures provided was effective.

Implications

The findings of the study have implications in nursing service, nursing education, nursing research and nursing administration.

1. The study will help the nurse in the hospital and community to plan for antenatal health programme to prevent low birth weight.

2. Health education activities can be initiated for the students and early detection of the risk factors.

3. The nurse educators can use the result of the study as information to the students.

4. Nursing students must be trained to trace the risk factors during the antenatal period itself.

5. Nurse educators can help in inculcating value and sense of responsibility in the students to care for antenatal mothers in the hospital and community to bring a healthy child to the nation.

6. The study provides awareness for further studies among the students in this area.

7. Future investigator can use this study as a reference material.

8. Multispectral approach can be provided to alleviate the problem.

9. Proper arrangements should be provided to conduct health education.

RECOMMENDATIONS

1. The study can be done in large sample.

2. The study can be conducted both the maternal and the causative factors for low birth weight.

3. A comparative study can be done among the effect of maternal factors and low birth weight.

4. A descriptive study to assess the knowledge, attitude and practice regarding various aspects of low birth weight.

CONCLUSION :

This study helps to assessed the effectiveness of selected nursing measures of neonates with low birth weight babies. The results revealed that selected nursing measures had significant effect in reducing the severe health deterioration of low birth weight babies and improve the physiological health status of the babies.

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APPENDICES

APPENDIX – 1

DEMOGRAPHIC VARIABLES OF NEONATES WITH LOW BIRTH WEIGHT

1.	Age of the baby	:	a. upto 2 days b. 2 days – 5 days c. 5 days and above
2.	Gender	:	a. Male b. Female
3.	Birth order of the neonate	:	a. First born b. Second born c. Third born d. Fourth born
4.	Birth weight of the neonate	:	
5.	Type of birth	:	a. Vaginal delivery b. Cesarean delivery
6.	Educational status of the father	:	a. Illiterate b. Primary school level c. High school level d. Graduate e. Professionally qualified
7.	Educational status of the mother	:	a. Illiterate b. Primary school level c. High school level d. Graduate e. Professionally qualified
8.	Occupation of the father	:	a. Government b. Private of Business c. Coolie d. Unemployed

9.	Occupation of the mother	:	a. Government b. Private of Business c. Coolie d. Unemployed
10.	Type of family	:	a. Nuclear family b. Joint family
11.	Family income	:	a. Rs.1000 per month b. Rs.1001 – 3000 per month c. Rs.3001 – 5000 per month d. Rs.2005 – above
12.	Marital status of parents	:	a. Consanguineous marriage b. Non-consanguineous marriage
13.	Health information through	:	a. Media (Radio, TV, Movie) b. Books & Magazines (Newspaper) c. Health personnel d. Friends &Neighbours

gphpT - 1

nrhejf;FwpgG

topKiwfs;: jq;fspd; tptuq;fis msp;f;FkhW Nfl;Lf; nfhs;fpNwhk;.

rhpahd ,lj;jpy; (√) Fwpapl Tk;.

1.	Foe ijapd taJ	:	m. gpwej 2ehs tiu M. 2ehs Kjy 5ehs tiu ,. 5ehs Kjy nfhz L
2.	,dk	:	m. M z M. ng z
3.	vjjidahtJ Foeij	:	m. Kjy gpwgG M. 2-Mk gpwgG ,. 3-k gpwgG <. 4-k gpwgG
4.	gpwggpd vil	:	
5.	gpwggpd tif	:	m. gpwgGWggpd topahf M. mWitrpfprir
6.	jeijapd fytpjuk	:	m. gbfftpyiy M. Mukgepiyfytp ,. cahepiyfytp <. gllggbgG c. njhopwrhhejfytp
7.	jhahh fytpjuk	:	m. gbfftpyiy M. Mukgepiyfytp ,. cahepiyfytp <. gllggbgG c. njhopwrhhejfytp

8.	je i ja‰d njho‰y tUkhdk	:	m. muRnjho‰y M. j d‰ahh (m) njho‰y (nrhejk) ,. $ y‰ <. Nt i yNa , yyhj t h
9.	jha tUkhdk	:	m. muRnjho‰y M. j d‰ahh (m) njho‰y (nrhejk) ,. $ y‰ <. Nt i yNa , yyhj t h
10.	F Lkgt i f	:	m. j d‰f F Lkgk M. $ l L f F Lkgk
11.	F Lkgt Ukhdk	:	m. &.1000 khjk M. &.1001 - 3000 t i u ,. &.3001 - 5000 t i u <. &.5001 - mjwFNky
12.	ngwNwhh‰d j‰Uk z k t i f	:	m. nrhejjjj‰y tUkhdk M. cwTmyyhje‰i y
13.	eyj J iwjf t y	:	m. njhiyfhlr‰ M. Gjjfk›Ngggh ,. RfhjhuJ iw <. e z ghfs kwWk cwt‰dhfs

APPENDIX – II

ONGOING ASSESSMENT SCALE FOR NEONATE WITH LOW BIRTH WEIGHT

Sl. No.	Item	Day				
	Observations	**I**	**II**	**III**	**IV**	**V**
1.	Appearance of skin a. Pink (3) b. Pallor (2) c. Jaundiced (1)					
2.	Cry a. Strong with normal tone (3) b. Whimpering (2) c. Weak cry (1)					
3.	Reflexes a. Active (3) b. Grimace (2) c. No response (1)					
4.	Feeding activity a. Strong and co-ordinated (3) b. Weak and disco-ordinated (2) c. Poor feeding (1)					
5.	Sleeping pattern a. Well sleeping (3) b. Disturbed (2) c. With irritable cry (1)					

6.	Sucking ability a. Normal (3) b. Poor sucking ability (2) c. Not feeding (1)					
7.	Keeping warmth a. Wrapped (3) b. Under radiant heat (2) c. Under incubator (1)					
8.	Umbilical cord I. Umbilical cord Redness a. Absence of redness (3) b. Redness present on the tip of the umbilical stump (2) c. Redness extends towards the base of umbilical stump (1)					
9.	II. Umbilical cord Swelling a. Absence of Swelling (3) b. Swelling present at the tip of umbilical stump (2) c. Swelling extends towards the base of umbilical stump (1)					
10.	III. Umbilical cord Discharge a. Absence of discharge (3) b. Serum discharge present (2) c. Purulent discharge present (1)					

Score :

21-30 - Normal health condition

11 - 20 - Mild health deterioration

10 - Severe health deterioration

APPENDIX – III

OBSERVATIONAL CHECKLIST FOR GENERAL ASSESSMENT OF NEONATE WITH LOW BIRTH WEIGHT

PART-I

Sl. No.	Item	Day				
	Vital Signs	**I**	**II**	**III**	**IV**	**V**
1.	Temperature a. 36.5^0c – 37.0^0c b. 38.0^0c- 40.0^0c c. 35.5^0c- 36.0^0c					
2.	Pulse rate a. 120 – 170 beats/ min b. 171 – 200 beats/ min c. less than 120 beats/ min					
3.	Respiration a . 40 – 70 breaths/ min b. 71- 80 breaths/ min c. Less than 40 breaths/ min					
4.	Feeding a. Breast feeding b. IV Fluids c. Total parental nutrition					
5.	Anthropometric measurement a. Head circumference b. Chest circumference c. Length d. Weight					

OBSERVATIONAL CHECK LIST OF NURSING CARE OF NEONATE WITH LOW BIRTH WEIGHT

PART – II

SI. No.	Nursing Care	Day				
		I	II	III	IV	V
1.	Care at Neonatal Intensive Care Unit					
2.	Maintenance of Breathing					
3.	Maintenance of Thermoregulation					
4.	Nutrition and Hydration					
5.	Vaccination					
6.	Follow – Up - Care					

Care of neonates with low birth weight

INTRODUCTION

Previously, the birth weight of 2500gm or less was taken as index of prematurity without taking any consideration of the gestational period or any other factors. But infants born at term or post term may weight less than 2500gm and occasional a baby of diabetic mother may weight much more than 2500gm even before 37 weeks. Thus, the inclusion of all the babies weighing less than 2500gm without due consideration to the gestational period seems inappropriate.

CENTRAL OBJECTIVES

To help the mothers to acquire knowledge and understand about the important of low birth weight and develop desirable attitude and skill in preventing low birth weight babies in future.

CONTRIBUTARY OBJECTIVES

The mother should be able to

- define low birth weight babies
- list down the types of low birth weight
- enlist the causes of low birth weight
- list out the clinical features of low birth weight
- discuss the nursing measures of low birth weight

CARE OF NEONATES WIH LOW BIRTH WEIGHT							
S. No	**Time**	**Contributory objectives**	**Content**	**Teaching activity**	**Listening activity**	**AV AIDS**	**Evalu-ation**
1.	1min	**The mother should be able to define low birth weight babies**	Low birth weight as one whose birth weight is less than 2500 gm irrespective of the gestational age.	Explaining	Listening	Chart	Asking question
2.	3 min	**The mother should be able to list down the types of low birth weight**	**Types of low birth weight :-** A low birth weight baby includes both 1. Preterm 2. Small for dates (SFD) Babies types of babies on the basis weight alone and gestational age with birth weight **Gestational age** • Preterm • Term • Post term **Birth Weight** **Preterm** - Small for date - Appropriate for date - Large for date **Term** -Appropriate for date _ Large for date - Small for date **Post term** - Appropriate for date - Large for date **PRETERM BABY**	Explaining	Listening	Chart	Asking question

CARE OF NEONATES WIH LOW BIRTH WEIGHT							
S. No	**Time**	**Contributory objectives**	**Content**	**Teaching activity**	**Listening activity**	**AV AIDS**	**Evalu-ation**
			DEFINITION: Baby born with a gestational age of less than 37 completed week **Incidence of low birth weight :** It constitutes 2/3 of low birth weight 20 to 25% in the developing countries 10% in the developed countries. **Intra uterine growth retardation** **Definition :** Babies with a birth weight less than 10^{th} percentile for their gestational age. **Incidence :** - Comprises about 1/3 of low birth weight - 2 to 8% in developed countries - 5% along term babies - 15% among post term babies				
3.	5 min	**The mother should be able to enlist the causes of low birth weight**	**Causes for pre term** **Constitutional :** Acute emotional stress, trauma - Low maternal weight and poor socio economic conditions and very young and unmarried mothers, too frequent child birth, history of previous preterm baby **- Maternal nutrition :** Anemia, maternal malnutrition **Maternal diseases**	Explaining	Listening	Charts	Asking questions

CARE OF NEONATES WIH LOW BIRTH WEIGHT							
S. No	**Time**	**Contributory objectives**	**Content**	**Teaching activity**	**Listening activity**	**AV AIDS**	**Evalu-ation**
			Ante parturn hemorrhage, cervical incompetence, threatened abortion bicarnuate uterus, chronic and systemic disease, and infection **- Toxins** Cigarette smoking, and drug abuse during pregnancy **- Fetal causes** Multiple pregnancy **Induced causes** - Maternal diabetes mellitus and severe heart disease. Placental dysfunction with unsatisfactory fatal growth - Eclampsia, severe pre eclampsia, and hypertension. Fetal hypoxia and fetal distress - Severe Rh incompability - Improper diagnosis of maternity in elective deliveries **Causes for Small for date Babies** **Maternal causes** - Constitutional : Small women, maternal genetic and radical background - **Maternal Nutrition** Glucose, Amino acid and oxygen deficiency **Maternal disease** Anemia, hypertension, heart disease and chronic renal disease **Toxins**				

CARE OF NEONATES WIH LOW BIRTH WEIGHT							
S. No	**Time**	**Contributory objectives**	**Content**	**Teaching activity**	**Listening activity**	**AV AIDS**	**Evalu-ation**
			Alcohol, smoking, cocaine, heroin, drugs **Fetal causes** - Structural Anomalies (Renal or cardiovascular) Chromosomal abnormalities - TORCH infection - Multiple pregnancy **Placental causes** - Chronic placental insufficiency, placenta previa, abruption, circumvallates, infarction, mosaicism				
4.	2 mins	**The mother should be able to list out the clinical features of low birth weight**	**Clinical features of preterm** - length - < 44 cm - weight – 2500 gm or < 2500 gm Head circumference disproportionately exceeds than that of the chart - The skin is thin, red and shiny, due to lack of subentanous fat and vernixcaseosa - Pinna of the ear are soft - The eyes are kept closed - Muscle tone is poor - Plantar creses are not visible before 32 weeks - The testis is undescended - The labia minora in exposed, and there is a tendency of herniation - The nail is not grown upto the finger tips	Explaining	Listening	Chart	Asking question

CARE OF NEONATES WIH LOW BIRTH WEIGHT							
S. No	**Time**	**Contributory objectives**	**Content**	**Teaching activity**	**Listening activity**	**AV AIDS**	**Evalu-ation**
			- Reflexes are poor **Clinical features of SFD** - Length is unaffected - Weight is about 600 gm below at birth - Dry and wrinkled skin because of less subcutaneous fat - Thin meconium stained vernixcaseosa - Scapoid abdomen - Plantar crease are well defined - Thin umblical cord - All these give a baby old man appearance - The baby is alert, active - has normal cry - Reflexes are normal				
5.	19 min	The mother should able to discuss the Nursing measures of low birth weight	**Nursing measures of low birth weight** 1. Care at neonatal intensive care unit 2. Maintenance of breathing 3. Maintenance of stable body temperature 4. Maintenance of nutrition and hydration 5. Vaccination of low birth weight 6. Follow-up care **MAINTENANCE OF BREATHING:** 1. Baby should be positioned with neck slightly extended and air passage to be cleared by gentle suctioning to remove the secretion, if needed.	explaining	Listening	Chart	Asking question

CARE OF NEONATES WIH LOW BIRTH WEIGHT							
S. No	**Time**	**Contributory objectives**	**Content**	**Teaching activity**	**Listening activity**	**AV AIDS**	**Evalu-ation**
			Precaution should be taken to prevent aspiration of secretion and feeds. 2. Concentration of oxygen to be maintained to have sao2 between 90 and 95% and pao2 between 60 and 80mm of Hg. 3. Baby's respiration rate, rhythm, signs of distress, chest retraction, nasal flaring, apnea, cyanosis, oxygen, saturation, etc. to be monitored at frequent interval. 4. Tackling stimulation by sole flaring can be provided to stimulate respiratory effort. 5. Chest physiotherapy by percussion, vibration and postural drainage may be needed to loosen and remove respiratory secretion. 6. Desirable level of arterial blood gas values should be-a) pao2 55-65mmHg b) paco2 35-45mmHg and c) PH 7.35-7.45 **MAINTENANCE OF THERMOREGULATION** ❖ Baby should be received in a prewar med radiant warmer or incubator. Environmental temperature should be maintained according to baby's weight and age. ❖ Baby skin temperature should be maintained 36.5 to 37. 5 degree celcious. ❖ Baby birth weight of less than 1200gm should be cared in the NICU incubator with 60 to 70%				

CARE OF NEONATES WIH LOW BIRTH WEIGHT							
S. No	**Time**	**Contributory objectives**	**Content**	**Teaching activity**	**Listening activity**	**AV AIDS**	**Evalu-ation**
			humidity, oxygen and thermonutral environment for better thermal control and prevent heat loss ❖ Alternatively the baby should be managed under radiant warmer with protective plastic cover. ❖ The baby as to be placed naked. If it possible maintain temperature of the entire room. ❖ The baby cot should be kept warm. Rubber hot water bottle may be usable for the purpose. The bottle should be filled with hot not boiled water. Those should be covered with cloths. ❖ The temperature of the cot should be checked so as to maintain it up to 85'F. ❖ Kangaroo mother care can be provided when the babys condition stabilized. Baby should be clothed with frock, cap socks, and mittens while giving kangaroo care. Bathing should be delayed **MAINTENANCE OF NUTRITION AND HYDRATION:** ❖ Caloric needs of non- growing LBW babies during first week of life are 60kcal/kg/day on 7^{th} is to be stepped up gradually to 100 on 14^{th} day and about 120-150 on 21^{st} day, to maintain satisfactory growth.				

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			❖ Human milk is the first choice of nutrition for all LBW babies. Colostrums, hind milk, foremilk, and preterm milk help faster growth of baby. ❖ If breast milk is not available cow's milk in proportion of 1:1 (milk XVI for 1st month and 2: 1 during second month is an alternative substitute. One teaspoon glucose should be added to 50ml of milk prepared for the first 10 days and there after reduce to 1 teaspoon to 100ml milk. ❖ Those babies who have good sucking and swallowing reflexes should start breastfeeding as early as possible. ❖ Expressed breast milk can be given through spoon and bowl at 2 hrs interval. Katoris- spoon or paladai can also be for feeding the preterm babys. ❖ Gavages or nasogastric tube feeding can be given with EBM to all babies with poor sucking reflex. ❖ Intravenous dextrose less than 1200gm or sick babies ❖ Starvation to be avoided and early enternal feeding should be started as soon as the baby is stable. Commencement: early feeding between 1-2 hours of birth is now widely recommended, the interval of feeding ranges from hourly in extreme prematurity to 3 hourly feeds in babies born after 36 weeks. The baby				

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			when kept in the cot, should be placed on one side with the head raised a little to prevent regurgitation. Additional supplements: supplement of minerals and vitamin after 2 weeks should be started. 1. vitamin-A 25000IU 2. Vitamin-D-600IU 3. vitamin-c-50mg. 4. vitamin-B1-0.5mg 5. folic acid -65mg. 6. Calcium and phosphorous supplementation also essential. A liquid preparation of iron 1-2mg/kg/day should be in the second or 3rd week. 7. IV gamma globulin therapy (400mg/kg/dose) may be given to prevent infection in selected cases. 8. Very LBW babies (<1500gm, <32 weeks gestation) need vitamin- E. ❖ the first day fluid requirement ranges from 60 to 100ml/kg(the difference from each categories being 20ml/kg each) ❖ The daily increment in all groups is around 10 to 15ml per kg till day 9. ❖ need extra requirement in case of phototherapy (20-40ml/kg/day) and radiant warmer (40-80ml/kg/day)				

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			VACCINATION OF LBW: If the LBW baby is not sick, the vaccination schedule is the same as for the normal babies. BCG, OPV, and HBV vaccine should be given at the time of discharge. **FOLLOW – UP CARE:** ❖ Baby's condition and progress to be explained to the parents to reduce their anxiety. Treatment plan should be discussed. ❖ Parents should be informed about the care of baby, after discharge at home. Need for warmth, breast feeding, general cleanliness, infection prevention measures, environmental hygiene, and follow up plan, immunization etc should be explained to the parents. ❖ Mostly healthy infant with a birth weight of 1800gm or more and gestational maturity of 3 weeks or more can be managed at home. Mother should be prepared mentally and trained to provide essential care to the preterm baby at home. At the discharge the baby should have daily steady weight gain with good vigor and able to suck and maintain warmth. Ultimate survival of the baby depends upon continuity of care. The community health nurses visit the family every week for a month and provide necessary guidance and support.				

SUMMARY :-

We have discussed about the definition of low birth weight, types of low birth weight, causes of low birth weight, clinical features of low birth weight and nursing measures of low birth weight. By this above content we have an adequate knowledge about low birth weight babies.

CONCLUSION :

With this content the mothers have acquired knowledge and practice regarding care of low birth weight babies.

Gøh SøÓÁõÚ SÇ¢øu°ß{»®£ØÔ

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ஒப்புதல் அறிக்கை

எனக்கு இந்த ஆய்வை பற்றிய முழு விவரம் விளக்கமாக எடுத்துரைக்கப்பட்டது. இந்த ஆய்வில் பங்கு பெறுதலில் உள்ள நன்மைகள் பற்றி நான் புரிந்து கொண்டேன். நான் இந்த ஆய்வில் தானாகவே முன்வந்து பங்கு பெறுகிறேன். மேலும், எனக்கு இந்த ஆய்வில் இருந்து எந்த நேரமும் விலகிக் கொள்ள முழு அனுமதி வழங்கப்பட்டுள்ளது. என்னுடைய ஆய்வு மற்றும் சிகிச்சை ஆவணங்களை பார்வையிட்டு அதில் உள்ள விவரங்களை ஆய்வில் பயன்படுத்தி கொள்ள அனுமதி அளிக்கிறேன். என்னுடைய பெயர் மற்றும் அடையாளங்களை ரகசியமாக வைத்துக்கொள்ளப்படும் என்றும் எனக்கு உறுதி அளிக்கப்பட்டுள்ளது.

இப்படிக்கு,

APPENDIX – V

CASE ANALYSIS

SAMPLE 1

The baby was admitted in the Neonatal Intensive Care Unit. It was a female child. Her birth weight was 1.8 kg. Baby born by vaginal delivery. Vital signs were checked. On the first day baby was jaundiced, having weak cry, poor feeding, diminished reflexes, baby was under the phototherapy, umbilical cord redness and swelling present. On the third day, Physiological parameters are monitored they went under normal limit.

SAMPLE 2

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. His birth weight was 1.5kg. Baby born by vaginal delivery. Vital signs were checked every fourth hour. On the first day the baby was kept under the phototherapy, having weak cry, diminished reflexes, poor feeding, baby was given to the mother for breast feeding. On the fifth day, baby Physiological parameters are monitored they went under normal limit.

SAMPLE 3

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. His birth weight was 1.7kg. Vital signs were checked. On the first day the baby was pallor, having poor response, poor feeding, baby was kept under the warmer, umbilical cord redness, swelling and serous discharge present. Intravenous fluid were administered. On the third day, baby was given expressed breast milk. On the fourth day, the baby was given to the mother for breast feeding, baby's sucking ability was improved, there was no discharge from the umbilicus, the umbilicus was healthy. On the fifth day Physiological parameters are monitored they went under normal limit.

SAMPLE 4

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. His birth weight was 1.9 kg. Baby was born by vaginal delivery. Vital signs were checked every fourth hour. Anthropometrics measurements were done. On the first day the baby was Jaundiced and kept under phototherapy, no response, weak cry, disturbed sleep, poor sucking ability, no discharge and swelling of the umbilical cord. Nursing care was given. The baby was given Intravenous fluids. On the second day, the baby was kept under incubator and expressed breast milk was given. On the fourth day, the baby was pink, the baby was given to the mother for breast feeding, sucking ability was good. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 5

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Baby born by cesarean delivery. Her birth weight was 2.0kg. On the first day, the baby was pale, and kept under the incubator and the baby was whimpering. Slow reflexes, having poor sucking ability, redness, swelling and serous discharge present from the umbilicus. Nursing care were given. The baby was given breast feeding. On the second day, the baby was kept under the incubator and breast feeding was given. The baby was whimpering, having disturbed sleep. On the third day, only sluggish reflexes present. On the fourth day the baby was feeding well, sucking reflex was normal. On the fifth day Physiological parameters are monitored they went under normal limit.

SAMPLE 6

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Baby born by vaginal delivery. His birth weight was 2.0kg. Vital signs were checked. On the first day, the baby was pallor, having weak cry, grimace, poor feeding, slept with irritable cry, baby kept under incubator umbilical cord was healthy. On the second day, the same symptoms present. Nursing care was given. On the third day, the sucking ability was improved. On the fourth day the

temperature was maintained within the normal limits. Baby was feeding well. On the fifth day Physiological parameters are monitored they went under normal limit.

SAMPLE 7

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 1.6kg. Baby born by cesarean delivery. Vital signs were checked. On the first day, the baby was jauindiced, kept under phototherapy, having poor reflexes, poor feedings, not feeding, redness and swelling present in the umbilical cord. On the second day, intravenous fluids were administered, having weak cry, kept under phototherapy. Nursing care was given. On the third day, the baby was kept under the warmer. Expressed breast milk was given. On the fourth day the sucking ability was improved. Baby was given to the mother for feeding. On the fifth day Physiological parameters are monitored they went under normal limit.

SAMPLE 8

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 1.9 kg. Baby born by vaginal delivery. Vital signs were checked. On the first day, the baby was kept under the warmer, having poor sucking ability, weak cry, no response, redness, swelling and not discharge present on the umbilical cord. Nursing care was given. Intravenous fluids were administered. On the second day, same symptoms present. On the third day, the sucking ability was improved, expressed breast milk was given. On the fourth day the sucking ability was improved. Vitals were stable. On the fifth day Physiological parameters are monitored they went under normal limit.

SAMPLE 9

The baby was admitted in the Neonatal Intensive Care Unit. It was a male baby. Its birth weight was 2.1kg. Vital signs were checked. On the first day, the child was pallor, whimpering, grimace, weak and disco-ordinated feeding, disturbed sleep, poor sucking ability, baby was kept under incubator, redness and swelling present in the umbilical cord. Nursing care was given. On the second day, the baby was kept under incubator, intravenous fluids were administered. On the third day,

expressed breast milk was given and on the fourth day baby was given to the mother for breast feeding, sleeping pattern was normal, feeding activity was improved, sucking ability was improved. On the fifth day Physiological parameters are monitored they went under normal limit.

SAMPLE 10

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 1.2kg. Baby born by vaginal delivery. Vital signs were checked. The baby was Jaundiced and kept under phototherapy. No response, poor feeding, irritable cry, redness, swelling and discharge present from the umbilical cord. Nursing care were given. On the second day, the baby was kept under phototherapy, total parental nutrition was given. On the third day, expressed breast milk was given to the neonate. The baby was kept under the incubator. On the fourth day, the baby was given to the mother for breast feeding. On the fifth day Physiological parameters are monitored they went under normal limit.

SAMPLE 11

The baby was admitted in the Neonatal Intensive Care Unit. It was a female child. Her birth weight was 1.7kg. Vital signs were checked. On the first day, the baby was pallor, having sluggish reflexes, poor feeding, poor sucking ability, baby kept under warmer. Nursing care was given. On the second day, intravenous fluids were given, having disturbed sleep. On the third day, the expressed breast milk was given, on the fourth day baby was given to the mother for breast feeding. On the fifth day, Physiological parameters are monitored they went under normal limit.

SAMPLE 12

The baby was admitted in the Neonatal Intensive Care Unit. It was a female child. Its birth weight was 2.2kg. Vital signs were checked. On the first day, the baby was pale, and kept under warmer, whimpering, grimace, weak and disco-ordinated feeding activity, poor sucking ability, redness and swelling present on the umbilical cord. Nursing care was given. Baby was given breast feeding alone. On the second and third day, breast feeding alone was given. On the fourth day vitals

were stable, sucking ability was improved. On the fifth day, Physiological parameters are monitored they went under normal limit.

SAMPLE 13

The baby was admitted in the Neonatal Intensive Care Unit. It was a female child. Its birth weight was 1.9 kg. Vital signs were checked. On the first day, the baby was light yellow in colour, having weak cry, poor response, disturbed sleep pattern, poor sucking ability, absence of redness, swelling and discharge from the umbilical cord. Nursing care was given intravenous fluids were administered. On the second day, the baby was kept under the incubator. Intravenous fluids were administered. On the third day, expressed breast milk was given. On the fourth day baby was given to the mother for breast feeding. Sucking ability was improved reflexes were normal, sleep pattern was improved. On the fifth day, Physiological parameters are monitored they went under normal limit.

SAMPLE 14

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 2.2 kg. Vital Signs were checked. On the first day, the baby was pale, redness and swelling present over the umbilical cord, baby was kept under the incubator. On the second day, the baby was kept under the incubator. Breast feeding was given. On the third day, the baby looked yellow in colour and kept under the phototherapy. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 15

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 2.0 kg. Baby was born by vaginal delivery. Vital signs were checked.On the first day, the baby looks pale and kept under the incubator, swelling and redness around the umbilical cord present, having disturbed sleep. Nursing care was given. On the second day, the baby was kept under incubator having disturbed sleep, breast feeding was given. On the third day, the baby developed Jaundice and kept under phototherapy. On the fourth day, breast feeding

was given and the baby was kept under phototherapy. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 16

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 2.2 kg. Baby was born by vaginal delivery. Vital signs were assessed. On the first day, the baby looked pale, whimpering, grimace, weak and dis-coordinated feeding activity, slept with irritable cry, redness, swelling and serous discharge present from the umbilicus. On the second day, breast feeding was given. Reflexes were normal. On the third day, baby was normal, breast feeding was given. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 17

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 1.8 kg. Baby was born by vaginal delivery. On the first day, the baby was jaundiced, having weak cry, poor feeding, poor sucking ability, disturbed sleep pattern, baby kept under phototherapy, swelling, serous discharge and redness seen over the umbilical cord. Nursing care was given. Intravenous fluids were given. On the second day, the baby was kept under the incubator, intravenous fluids were given. On third day, expressed breast milk was given, baby slept well, cry was normal with normal tone. On the fourth day, the baby was given to the mother for breast feeding. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 18

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 2.1 kg. Baby was born by Cesarean delivery. Vital signs were checked. On the first day, the baby looked pale, whimpering, grimace, weak and dis-coordinated feeding, disturbed sleep, poor sucking ability, baby kept under warmer, redness and swelling around the umbilical cord present. Nursing care was given. On the second day, cry was normal with normal tone, sleep pattern was

improved. On the third day, breast milk was given, on the fourth day, breast feeding was given. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 19

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 1.6 kg. Baby was born by Cesarean delivery. Vital signs were checked. On the first day, the baby was jaundiced, kept under phototherapy, having weak cry, no response, poor feeding, poor sucking ability, not feeding, swelling and purulent discharge present over the umbilical cord. Nursing care was given. Intravenous fluids were administered. On the second day, intravenous fluids were administered, not feeding. On the third day, cry was normal, sluggish responses seen. On the fourth day, expressed breast milk was given, baby was kept under incubator. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 20

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 1.7 kg. Baby was born by vaginal delivery. Baby looked yellow in colour, and kept under the phototherapy, not feeding, poor sucking ability. Nursing care was given. The baby was given total parental nutrition. On the second day total parental nutrition was given. On the third day, the baby was kept under incubator. On the fourth day, expressed breast milk was given. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 21

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 2.2 kg. Baby was born by normal vaginal delivery. The baby was pale, kept under the incubator. On the third day, the baby was given to the mother for breast feeding. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 22

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 1.5 kg. Baby was born by vaginal delivery. Vital signs were assessed. On the first day, the baby was kept under phototherapy, having poor feeding and not feeding, poor sucking ability, no response. Nursing care was given. On the second day, total parental nutrition was given. On the third day, total parental nutrition was given and the child kept under phototherapy. On the fourth day, the baby was kept under the incubator, but not feeding. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 23

The baby was admitted in the Neonatal Intensive Care Unit. It was a female child. Its birth weight was 2.0kg. On first day, the baby looked pale, sluggish response, baby kept in incubator. On the second day and third day, baby was given breast feeding. On the fourth day, the baby was normal and looked pink. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 24

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 1.9 kg. On the first day, baby looked pale and had poor sucking ability. Nursing care was given. Vital signs were assessed. On the third day, expressed breast milk was given. On the fourth day, baby was given to the mother for breast feeding. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 25

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 1.8 kg. Vital signs were checked. On the first day, the baby was jaundiced, and kept under phototherapy, baby not feeding well. Intravenous fluids were administered. On the second day, intravenous fluids were administered. On the third day, expressed breast milk was given. On the fourth day,

baby was given to the mother for breast feeding. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 26

The baby was admitted in the Neonatal Intensive Care Unit. It was a female child. Its birth weight was 1.2 kg. On the first day, the baby was kept under phototherapy and was on total parental nutrition. Nursing care was given. On the second day, the baby kept under phototherapy and on total parental nutrition. On the third day, the baby was given intravenous fluid administration. On the fourth day, expressed breast milk was given. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 27

The baby was admitted in the Neonatal Intensive Care Unit. It was a male child. Its birth weight was 2.0 kg. On the first day, baby was kept under incubator, and had poor feeding. On the second and third day, the baby was given expressed breast milk. On the fourth day, baby was given to the mother for breast feeding. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 28

The baby was admitted in the Neonatal Intensive Care Unit. It was a female child. Its birth weight was 1.8 kg. Baby born by vaginal delivery. On the first day, the baby looked pale, and kept under incubator, intravenous fluids were administered. On the second and third day, expressed breast milk was given. On the fourth day, the baby was given to the mother for breast feeding. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 29

The baby was admitted in the Neonatal Intensive Care Unit. It was a female child. Its birth weight was 1.8 kg. Baby born by vaginal delivery. On the first day,

the baby looked pale, and kept under incubator, intravenous fluids were administered. On the second and third day, expressed breast milk was given. On the fourth day, the baby was given to the mother for breast feeding. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

SAMPLE 30

The baby was admitted in the Neonatal Intensive Care Unit. It was a female child. Its birth weight was 1.5 kg. Baby was born by vaginal delivery. On the first day, the baby was kept under phototherapy, having weak cry, poor feeding ability, poor sucking ability, total parental nutrition was administered. Nursing care was given. On the second and third day, baby was kept under the incubator, expressed breast milk was given. On the fourth day, the baby was given to the mother for breast feeding. On the fifth day, the baby Physiological parameters are monitored they went under normal limit.

ந.க.எண். 3499/க4/2016

இணை இயக்குனர் நலப்பணிகள்
அலுவலகம், காஞ்சிபுரம்.

நாள். .6.16

மருத்துவப் பயிற்சி ஆணை

பொருள் : மருத்துவப் பயிற்சி - இணை இயக்குனர் நலப்பணிகள் அலுவலகம், காஞ்சிபுரம் - திருமதி.ஜ.பிரதீஷா. M.Sc(N) காஞ்சிபுரம் அரசினர் மாவட்ட தலைமை மருத்துவமனை கிளினிகல் பயிற்சி - பெற அனுமதி ஆணை வழங்குதல் தொடர்பாக.

பார்வை : 1. G.O.(Ms).No.341, Health and Family Welfare (MCA.1) Dept., dt. 24.7.1996.
2. G.O.(Ms).No.319, Health and Family Welfare (MCA.1) Dept., dt. 30.11.2001.
3. G.O.(D)No.1258/Health and Family Welfare (MC2) Dept., dt. 20.11.14.
4. காஞ்சிபுரம், வாலாஜாபாத், பத்மஸ்ரீ காலேஜ் ஆப் நர்சிங், திருமதி.ஜ.பிரதீஷா அவர்களின் கடித நாள்.16.6.16.

.....

பார்வையிற் காணும் அரசாணைகளின்படி, M.Sc(N) II year பயிலும் மாணவர்கள் ஒரு மாதம் அரசு மருத்துவமனைகளில் கிளினிகல் பயிற்சி **(A Study to asses the effectiveness of selected nursing measures of neonates with low birth babies to intensive care unit)** பெற்றுக்கொள்ள அனுமதி வழங்கப்பட்டுள்ளது. பார்வை (4)ல் காணும் கடிதத்தின்படி திருமதி.ஜ.பிரதீஷா, **M.Sc(N)** அவர்கள் காஞ்சிபுரம் மாவட்ட அரசினர் தலைமை மருத்துவமனையில் ஒரு மாதம் கிளினிகல் பயிற்சி பெற கோரியதை தொடர்ந்து காஞ்சிபுரம் மாவட்ட அரசினர் தலைமை மருத்துவமனையில் ஒரு மாதம் கிளினிகல் பயிற்சி பெறுவதற்கு திருமதி.ஜ.பிரதீஷா, M.Sc(N) (Tamil Nadu Nursing Council Registration No.110659 dt.9.8.2011) அவர்களுக்கு இதன்மூலம் ஆணை வழங்கப்படுகிறது.

மேலும், திருமதி.ஜ.பிரதீஷா, **M.Sc(N)** அவர்கள் காஞ்சிபுரம் மாவட்ட அரசினர் தலைமை மருத்துவமனையில் ஒரு மாத கிளினிகல் பயிற்சி பெறுவதற்கு அரசாணையில் வ.எண்.16ல் குறிப்பிட்டுள்ள தொகை ரூ.10,000க்கு வங்கி வரைவோலையை (Demand Draft) மேற்கண்ட NICU பயிற்சி பெறுவதற்கு தக்க ஆணை வழங்கிடுமாறு மருத்துவமனைக் கண்காணிப்பாளர் அவர்கள் கேட்டுக்கொள்ளப்படுகிறார்.

இணை இயக்குனர் நலப்பணிகள் (பொ),
காஞ்சிபுரம்.

பெறுநர்
மருத்துவமனைக் கண்காணிப்பாளர்,
அரசினர் மாவட்ட தலைமை மருத்துவமனை, காஞ்சிபுரம்.

நகல் : திருமதி.ஜ.பிரதீஷா, M.Sc(N) பத்மஸ்ரீ காலேஜ் ஆப் நர்சிங், வாலாஜாபாத், காஞ்சிபுரம் மாவட்டம். -(ரூ.10000/-க்குண்டான வங்கி வரைவோலையை Hospital Superintendent, Govt. Head Quarters Hospital, Kancheepuram. என்ற முகவரிக்கு வங்கி வரைவோலையை எடுத்துக் செல்லும்படி கேட்டுக்கொள்ளப்படுகிறார்.)

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tool constructed by I PRATHEESHA, II year M.Sc. (N) student of Padmasree College of Nursing, Walajabad, Kanchipuram District, which is to be used her study titled "A Study to assess the effectiveness of selected nursing measures of neonates with low birth weight babies at Government Head Quarter Hospital, Kanchipuram" has been validated by the undersigned. The suggestions and modifications given by me will be incorporated by the investigator in concern with their respective guide. Then she can proceed in do the research.

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Date : 16-06-2016

18 June 2016

CERTIFICATE FOR CONTENT VALIDITY

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Date : 10.08.16

This is to certify that the dissertation prepared by Mrs.I.Pratheesha M.sc., (Nursing) II Year Student of the Padmasree College of Nursing Walajabad, Kanchipuram Dist, has been over viewed by me. The English grammer has been checked and corrected in her study title "A Study To Assess The Effectiveness Of Selected Nursing Measures Of Neonates With Low Birth Weight Babies At Government Head Quarters Hospital, Kanchipuram"

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Ayyapanthangal, Chennai-56.

சான்றிதழ்

திருமதி. இ. பிரதிஷா M.sc., (Nursing) இரண்டாம் ஆண்டு, வாலாஜாபாத், பத்மஸ்ரீ செவிலியர் கல்லூரியில் பயிலும் மாணவி தனது ஆராய்ச்சியில் பயன்படுத்திய வினாத்தாள் தமிழ் இலக்கண முறைப்படி சரிபார்க்கப்பட்டது மற்றும் பிழைத்திருத்தம் செய்யப்பட்டது என சான்றளிக்கப்படுகிறது.

இப்படிக்கு,

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